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Selecting Presentation Modes According To Personnel Characteristics And The Nature of Job Tasks

Part II: Personnel Characteristics Volume 1, Summary and Analysis

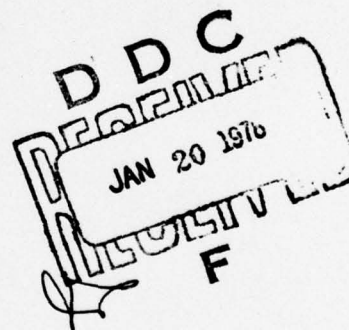
by

Thomas E. Powers, Ph.D.

University of Maryland Baltimore County

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report deals with certain characteristics of Navy enlisted personnel: age, sex, and race distributions; scores on the Basic Test Battery (BTB) and Armed Services Vocational Aptitude Battery (ASVAB); Mental Group distri- butions; educational degrees; years of education; and enlistments. These characteristics are examined by Navy Occupation groups, ratings, and pay grade clusters (E1-E3, E4-E6, and E7-E9) for the years 1972, 1973, 1974, 1975, and 1976. Volume 1 of this report is a summary and analysis of trends by personnel characteristics, including implications for technical data		

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20. presentation. Volume 2 contains data tables for every Navy occupation group and rating for 1972-76 for the characteristics mentioned.

see also Part I, AD-A038511.

Navy Technical Information
Presentation Program

SELECTING PRESENTATION MODES
ACCORDING TO PERSONNEL CHARACTERISTICS
AND THE NATURE OF JOB TASKS

PART II: PERSONNEL CHARACTERISTICS
Volume I, Summary and Analysis

Thomas E. Powers, Ph.D.
University of Maryland
Baltimore County
July, 1977

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I. INTRODUCTION

A. Report Organization

This report is Volume 1 of Part II to Selecting Presentation Modes According to Personnel Characteristics and the Nature of Job Tasks. Entitled Personnel Characteristics, Part II contains two volumes: Summary and Analysis (Vol. 1) and Data Tables (Vol. 2). The other parts of the study named above are: Job Tasks (Part I); Presentation Modes (Part III); and Conceptual Model (Part IV). The total study develops a model for selecting technical information presentation modes according to Navy personnel characteristics and the nature of technical job tasks.

Volume 1 of Part II is divided into three main sections: Introduction, Findings, and Conclusions. The Introduction describes the background of the Navy Technical Information Presentation Program (NTIPP) and the purpose of the research on job tasks, personnel characteristics, and presentation modes. This section also describes the personnel characteristics, data sources, and ratings involved in the report.

The Findings are arranged by total enlisted personnel, enlisted accessions, and occupation groups/ratings. Demographic, aptitude, and educational information are reported for each of these three subsections, and enlistment information is reported for the subsection on occupation groups/ratings. Enlistments by mental group categories are reported for ratings only, because such data for occupation groups were not available.

In the Conclusions section, a number of deductions and inferences are stated based on trends between 1972 and 1976 with respect to age, sex, race, manning, education, aptitude, and enlistments in the Navy.

B. Background

Complaints from many Navy activities have indicated that a significant number of Navy technical manuals (TMs) are defective. One major defect in many TMs has been the poor quality of presentation modes¹ for transmitting information essential to the performance of operator and maintenance tasks. A common criticism is that many TMs are difficult to use. Writing levels are not matched to user abilities; there is an inadequate balance among "what to do," "how to do," and "why"; and formats are not standardized. Such defective TMs can have an adverse effect on Fleet operational readiness if these TMs are critical to the satisfactory performance of certain operation and maintenance tasks. The Navy Technical Information Presentation Program (NTIPP) was created and funded as a major effort to find solutions to these problems.

A major assumption behind any endeavor to improve the kinds of defects described above is that there is a causal relationship between TM quality and user performance. That is, it is assumed that the capability of maintenance technicians to perform troubleshooting tasks on a piece of hardware, for example, is dependent in part upon the capacity of the related technical manual to present troubleshooting procedures in a manner which is comprehensible to the technician.

¹For purposes of this research, the term "presentation mode" refers to any visual format used to transmit technical information to a technician.

This aspect of the TM question thus represents a technical information presentation problem. Specifically, a mismatch between the information vehicle (the TM) and the information user (the technician) results in unsatisfactory operation/maintenance performance -- either from the technician's misunderstanding or non-use of the TM.

The research described by this report employs instructional design concepts in dealing with the TM question, an approach which assumes that a TM is, in a broad sense, an instructional or learning vehicle. The following premise is adopted: If "learner" (technician) characteristics can be better matched with the "learning vehicle" through which information is presented (the TM), "learning" (operator and maintenance performance) will be more effective.

The instructional design concept which is most compatible with both current Navy Training philosophy and contemporary practices in the vocational training community is Instructional Systems Development (ISD).¹ In its most simple form, an ISD approach defines learning in terms of observable performances, and attempts to focus on the congruity among the three major components of any learning process: the learner, the required learning performance, and the learning vehicle. The learning process may be described in terms of the three components: (1) Salient characteristics of the learner (ability, learning style, etc.) are matched with (2) the required learning as defined by precise descriptions of the

¹See Interservice Procedures for Instructional Systems Development. NAVEDTRA 106A. August 1975.

cognitive/motor behaviors desired, and finally (3) the learning vehicle (which may be either an intricate instructional strategy or a more simplified medium/format combination for presenting information) is selected which is most suited to "1" in accomplishing "2." This requires that there be congruity among the three components, and instructional design concepts are important tools in producing a valid relationship among them.

In summation, the information presentation problems associated with many TMs seem to lend themselves to the ISD approach. Viewed in that way, appropriate portions of a TM can be thought of as "learning" vehicles for eliciting the cognitive/motor responses desired for operator or maintenance job tasks.

C. Purpose

The overall purpose of this study is to investigate a relationship among Navy personnel characteristics, job tasks, and technical information presentation modes. Success in such an investigation would provide a basis for selecting presentation modes appropriate to the nature of job tasks and variations in characteristics of job task performers.

The research of this project involves four principal endeavors as follows:

1. Generic Job Tasks: The identification of those categories of job tasks, which are common to all or most of the technical Navy ratings, and which usually require technical data presentation for their performance.

2. Personnel Characteristics: The identification of trends and variations in the aptitudes of Navy enlisted personnel differentiated by Navy occupation specialties (occupation groups/ratings) and by pay grades.

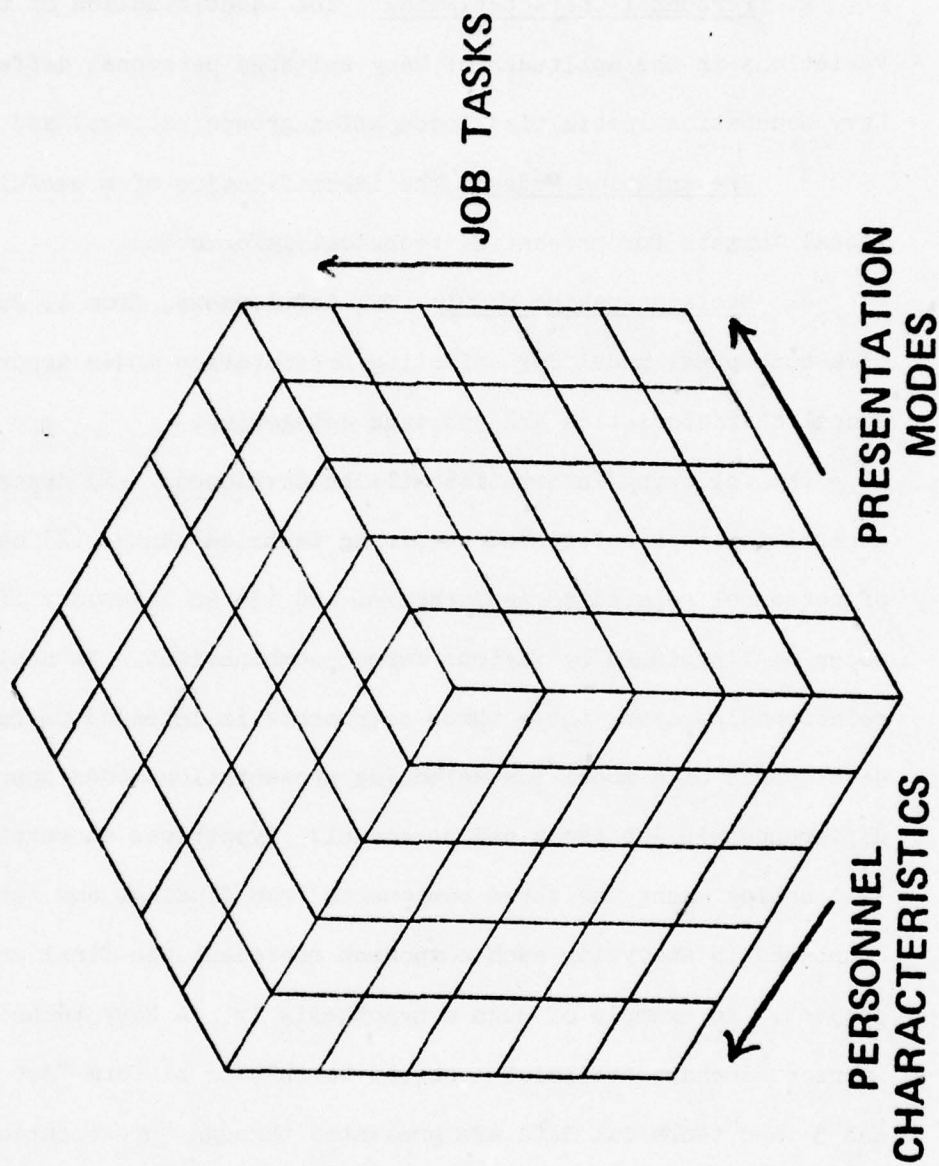
3. Presentation Modes: The identification of a useful inventory of visual formats for presenting technical information.

4. Decision-making Model: The development, from 1, 2, and 3 above, of a conceptual model for selecting presentation modes according to personnel characteristics and job task categories.

The following information will be developed: (1) descriptions of general job task categories requiring technical data; (2) characteristics of personnel related to performance; and (3) an inventory of presentation modes distinguished by various format combinations. An analysis of interrelationships among these three components is intended to result in the development of a model for selecting presentation modes appropriate to differences in job tasks and personnel. Hypotheses concerning interrelationships among the three components from findings and theories encountered in analyzing each component represent the final product of this project. An example of such a hypothesis is: A Navy technician with "personnel characteristic" A should be able to perform "job tasks" 1, 2, and 3 when technical data are presented through "presentation modes" I and II. The aggregate of hypotheses could conceivably be seen in terms of a three-dimensional structure (personnel characteristics, job tasks, presentation modes) in which each cubical cell could be associated with a level of match/mismatch among the three components. Figure 1 is a graphic illustration of such a structure.

FIGURE 1

THREE DIMENSIONAL MODEL
INDICATING MATCHING OF PRESENTATION MODES TO PERSONNEL CHARACTERISTICS AND JOB TASKS*



*A level of match or mismatch can be associated with each cubical cell.

D. Personnel Characteristics Description

Objective

The chief objective of the research on enlisted personnel characteristics was to make reasonably detailed assessments of the mental capabilities of sailors in today's highly technical Navy. In making decisions regarding the selection of the most appropriate modes for presenting technical data for technical job tasks, it is first necessary to have fairly accurate information about the potential of technicians. Predictably, one major indicator of that potential is the mental aptitudes and educational background of personnel initially electing to join, and later deciding to reenlist in, the Navy.

Data Source: Enlisted Master Tapes

The main source of data for this study was the Enlisted Master Tapes (EMT). Developed and maintained by the Chief of Naval Personnel, the EMT's contain personal and career information for each enlisted man on active duty in the Navy. Among the information recorded on the EMT's are: date of birth, sex, race, home address, civilian education, enlistment date(s), rate, aptitude scores, Navy schooling, military assignments, etc. Computer printout reports of some data from the EMT's are produced regularly by the Chief of Naval Personnel to examine personnel quality and strengths in the Navy.¹ In addition to producing these routine reports, the Chief of Naval Personnel occasionally approves specific re-

¹For example, Navy Military Personnel Statistics, NAVPERS 15658 is published quarterly, as well as annually, to report information about strengths, accessions, attritions, enlistments, reenlistments, etc. in the Navy.

quests from Navy activities for access to certain EMT data, and in such cases a special computer program is written to extract the data required.¹

In regard to this study, four kinds of data were extracted from the EMT's for each of the years 1972 through 1976.²

1. Demographic Factors: Counts by age, sex, and race.
2. Aptitude Factors: Scores on Navy aptitude tests and distribution of personnel by mental group categories.
3. Educational Factors: Number of degrees³ obtained and years of civilian schooling completed.
4. Enlistment Factors: Number of personnel in first, second, etc. enlistment.

Although much of an earlier report⁴ on Navy personnel characteristics had pertained to the total enlisted community, few breakouts of information by occupational specialty and pay grade were included. The present study reports the four types of factors listed above according to Navy occupation groups, ratings, and certain pay grade clusters. Based on trends in the five most recent years (1972-76), the report makes appro-

¹Special printouts of EMT data were provided by the Chief of Naval Personnel for NTIPP from a computer program developed jointly by NTIPP and Bureau of Naval Personnel workers. The printouts are identified as follows: MAPMIS 5314-9519 and MAPMIS 5314-9520, EOT Support for the David W. Taylor Research and Development Center.

²Data reported in this study are for the end-of-the-fiscal-year (30 June) unless otherwise indicated.

³The term "degree" normally refers to a post-secondary school diploma. Because of the Navy's broader use of the term, in this study a high school diploma is also included in the category of "degree."

⁴Thomas E. Powers, Navy Enlisted Personnel Characteristics - Preliminary Analysis, 2062 FD 98. ManTech Corporation of New Jersey, 30 June 1976.

priate projections for the future.

Navy Occupation Groups and Ratings

Table 1 lists Navy ratings by Navy occupation groups, all of which are treated in this report. In an effort to provide as definitive information as possible, a rating (e.g., GM) is divided into subspecialties where this is appropriate (e.g., GMM, GMT, GMG) throughout the analysis.

The Navy aptitude test scores used in this research are for the Basic Test Battery (BTB) and the Armed Services Vocational Aptitude Battery (ASVAB). For many years, the Navy's principal indicator of a sailor's mental potential was his scores on the BTB, particularly scores on three subtests: General Classification Test (GCT), Arithmetic Reasoning (ARI), and Mechanical Comprehension (MECH). The BTB was replaced by the ASVAB as the means for screening and classifying recruits in January, 1976. Personnel presently inducted into the Navy are tested by ASVAB inventories. Some ASVAB subtests correspond closely in description to subtests on the BTB, while other ASVAB subtests involve new concepts in personnel classification. BTB and ASVAB subtests which reportedly measure similar aptitudes are:

BASIC TEST BATTERY (BTB)

General Classification Test (GCT)
Arithmetic Reasoning (ARI)
Mechanical Comprehension (MECH)
Clerical (CLER) or Coding Speed Test (CST)
Shop Practices (SHOP)
Electronics Technician Selection Test (ETST)

ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB)

Word Knowledge (WK)
Arithmetic Reasoning (AR)
Mechanical Comprehension (MC)
Numerical Operations (NO) and
Attention to Detail (AD)
Shop Information (SI)
Electronics Information (EI), and
Mathematics Knowledge (MK), and
General Science (GS)

TABLE 1

NAVY RATINGS AND OCCUPATION GROUPS

<u>Rating Abbrev.</u>	<u>Rating Description</u>
<u>Group I - Deck</u>	
BM	Boatswain's Mate
MA	Master-At-Arms
QM	Quartermaster
SM	Signalman
OS	Operations Specialist
EW	Electronic Warfare Technician
ST	Sonar Technician
STG	Sonar Technician (Surface)
STS	Sonar Technician (Submarine)
OT	Oceanographic Technician
<u>Group II - Ordnance</u>	
TM	Torpedoman's Mate
GM	Gunner's Mate
GMM	Gunner's Mate Missiles
GMT	Gunner's Mate Technician
GMG	Gunner's Mate Guns
FT	Fire Control Technician
FTG	Fire Control Technician Guns
FTM	Fire Control Technician Surface Missile
FTB	Fire Control Technician Ballistic Missile
MT	Guided Missileman
MN	Mineman
<u>Group III - Electronics</u>	
ET	Electronic Technician
ETN	Electronic Technician Communications
ETR	Electronic Technician Radar
DS	Data Systems Technician
<u>Group IV - Precision Equipment</u>	
PI	Precision Instrumentman
IM	Instrumentman
OM	Opticalman

TABLE 1 (cont'd)

NAVY RATINGS AND OCCUPATION GROUPS

<u>Rating Abbrev.</u>	<u>Rating Description</u>
<u>Group V - Administrative and Clerical</u>	
NC	Navy Counselor
RM	Radioman
CTT	Cryptologic Technician (Technical Branch)
CTA	Cryptologic Technician (Administrative Branch)
CTM	Cryptologic Technician (Maintenance Branch)
CTO	Cryptologic Technician (Communications Branch)
CTR	Cryptologic Technician (Collection Branch)
CTI	Cryptologic Technician (Interpretive Branch)
YN	Yeoman
LN	Legalman
PN	Personnelman
DP	Data Processing Technician
SK	Storekeeper
DK	Disbursing Clerk
MS	Mess Management Specialist
CS	Commissaryman
SD	Steward
SH	Ship's Serviceman
JO	Journalist
PC	Postal Clerk
IS	Intelligence Specialist
<u>Group VI - Miscellaneous</u>	
LI	Lithographer
DM	Illustrator Draftsman
MU	Musician
SN	Seaman (Apprenticeship)
<u>Group VII - Engineering and Hull</u>	
MM	Machinist's Mate
EN	Engineman
MR	Machinery Repairman
BT	Boiler Technician
BR	Boilermaker
EM	Electrician's Mate
IC	Interior Communications Electrician
HT	Hull Technician

TABLE 1 (cont'd)

NAVY RATINGS AND OCCUPATION GROUPS

<u>Rating Abbrev.</u>	<u>Rating Description</u>
<u>Group VII - Engineering and Hull (cont'd)</u>	
PM	Patternmaker
ML	Molder
FN	Fireman (Apprenticeship)
<u>Group VIII - Construction</u>	
CU	Construction Man
EA	Engineering Aide
CE	Construction Electrician
EQ	Equipmentman
EO	Equipment Operator
CM	Construction Mechanic
BU	Builder
SW	Steelworker
UT	Utilities Man
CN	Constructionman (Apprenticeship)
<u>Group IX - Aviation</u>	
AF	Aircraft Maintenance Technician
AV	Avionics Technician
AD	Aviation Machinist's Mate
ADR	Aviation Machinist's Mate - Reciprocating Engines
ADJ	Aviation Machinist's Mate - Jet Engines
AT	Aviation Electronics Technician
AX	Aviation Antisubmarine Warfare Technician
AW	Aviation Antisubmarine Warfare Operator
AO	Aviation Ordnanceman
AQ	Aviation Fire Control Technician
AC	Air Controlman
AB	Aviation Boatswain's Mate
ABE	Aviation Boatswain's Mate - Launch & Recovery
ABF	Aviation Boatswain's Mate - Fuel Handling
ABH	Aviation Boatswain's Mate - Aircraft Handling
AE	Aviation Electrician's Mate
AM	Aviation Structural Mechanic
AMS	Aviation Structural Mechanic - Structures
AMH	Aviation Structural Mechanic - Hydraulics

TABLE 1 (cont'd)

NAVY RATINGS AND OCCUPATION GROUPS

<u>Rating Abbrev.</u>	<u>Rating Description</u>
<u>Group IX - Aviation (cont'd)</u>	
AME	Aviation Structural Mechanic - Safety Equipment
PR	Aircrew Survival Equipmentman
AG	Aerographer's Mate
TD	Training Deviceman
AK	Aviation Storekeeper
AZ	Aviation Maintenance Administrationman
AS	Aviation Support Equipment Technician
ASE	Aviation Support Equipment Technician - Electrical
ASH	Aviation Support Equipment Technician - Hydraulic/Structures
ASM	Aviation Support Equipment Technician - Mechanical
PH	Photographer's Mate
PT	Photographic Intelligenceman
AN	Airman (Apprenticeship)

Group X - Medical

HM	Hospital Corpsman
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Group XI - Dental

DT	Dental Technician
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Note: The CS and SD ratings were absorbed by the MS rating in 1975.

The PT rating was absorbed by the IS rating in 1976.

Three other ASVAB subtests are General Information (GI), Space Perception (SP), and Automotive Information (AI).

Since mental group figures are reported in this research, it is important to understand the derivation and any shortcomings of the mental group categories. Three subtests from the BTB and ASVAB inventories are used to place a sailor in one of five mental group categories (I, II, III, IV, V). Mental Group I is highest, and Mental Group V, the lowest, with Mental Groups I, II, and Upper III defining the range into which a recruit's scores must fall to be eligible for a Navy occupational school. Personnel in these groups are therefore commonly referred to as "school eligibles." General requirements for school eligibility are described in Appendix A, and aptitude criteria for particular Navy schools are given in Appendix B.

Personnel presently on active duty have been given a mental group designation according to one of three methods:

1. A formula which, according to the Bureau of Naval Personnel, was used to convert a GCT into a mental group category. (Usually personnel inducted prior to 1964.)
2. $GCT + ARI + MECH$ (a $G+A+M$ or GAM score from the BTB) which is converted to an AFQT (Armed Forces Qualification Test) percentile score. The AFQT percentile score determines a sailor's mental group category. (Usually personnel inducted between 1964 and 1975.)
3. $WK + AR + SP$ from the new ASVAB which, like the GAM from a BTB, is converted to an AFQT percentile score. Again, the AFQT percentile score determines mental group. (Usually personnel inducted after 1 January 1976.)

Tables for converting raw scores on BTB and ASVAB subtests into equivalent AFQT percentile scores and mental group categories are contained in Appendices C, D, and E. The AFQT percentile ranges which define mental groups for both the BTB and ASVAB subtests are:

<u>Mental Group Category</u>	<u>AFQT Percentile Score</u>
I	93-99
II	65-92
Upper III	49-64
Lower III	31-48
IV	10-30
V	9-below

The major shortcoming of the Navy's mental group classification system is that three different formulas have been employed over the years to calculate mental group categories. As noted, the formula employed has depended upon a sailor's date of entry into the Navy. Thus, with three means for placing a person in a mental group, mental group figures cannot be considered 100% reliable. Their main value in this research is that they indicate trends, distributions, and comparisons rather than represent infallible indices of mental capability. Although five categories are defined above, Mental Group V is virtually non-existent, with less than a dozen known enlisted personnel presently falling into that category.

Seven characteristics are analyzed in Volume 1 of this report of Personnel Characteristics. The raw data for each characteristic are presented by occupation groups and ratings in Volume 2. The seven characteristics are:

1. Age, Sex, Race
2. Aptitude Test Scores
3. Mental Group Categories
4. Educational Degrees
5. Years of Education
6. Enlistments
7. Mental Group Categories by Enlistments

A first enlistment is usually for four-to-six years. Each reen-

listment can vary in length, usually from two to six years. In calculating data for "Mental Group Categories by Enlistments," two characteristics are combined to show the percent of those in each mental group category who are in their first, second, and third (or higher) enlistment.

E. Explanations

Complete, Known, and Unknown Figures

Counts, percentages and scores for each rating and occupation group are based on known figures. "Unknowns" occur in cases in which the Enlisted Master Tape maintained by the Bureau of Naval Personnel did not contain a piece of information (e.g., BTB scores) for some numbers of personnel. In most instances (e.g., virtually every table for Age, Sex, and Race), complete and known figures are identical. Percentages calculated from known counts (e.g., Mental Group categories) are considered to be representative of complete counts because the known counts represent an extremely high fraction of the complete counts and because there is nothing unusual about the unknown group.

Average Test Scores

The count shown for each pay grade and year for the years 1972-76, is the complete count of personnel in that pay grade category for that year. In many cases, however, the number used to compute average scores is considerably less than the complete number because of unknowns. Since there is nothing unusual about those personnel for whom test scores are omitted on the Enlisted Master Tape, it is likely that even a small count is sufficiently random in nature to yield a valid average test score for a group

of personnel. Nevertheless, in the interest of accuracy, average test scores have been left out of tables when the number which would be used to calculate the average is less than 25% of the complete count.

Percent Figures

The "TOTAL" for many percentage columns (e.g., AGE, SEX, RACE, EDUCATIONAL DEGREES, etc. by ratings) will usually show "100%," even though the aggregate of the numbers in a column sometimes might be less than 100. The reason for this is that the computer program developed to access the Enlisted Master Tapes rounded fractions of a percent downward, even when .5 or above. For example, a 38.6% on the Enlisted Master Tape appeared on the printout as 38% rather than 39%. Consequently, an actual percent figure could be as much as 0.9% higher than shown.

Organization of Findings

The Findings are divided into three sections: (1) Total Navy, (2) Accessions, and (3) Occupation Groups/Ratings. Demographic data, aptitudes, and educational factors are considered in each section, as well as enlistment factors in the section on occupation groups/ratings. In this last section, enlistments are examined by mental group categories for ratings, but data were not available for occupation groups.

Preliminary Analysis of Personnel Characteristics

Much of the information from the initial analysis of personnel characteristics (i.e., Powers, 1976) is up-dated in this report, with one important exception. The Mental Group figures by ratings listed in the first report were calculated by BUPERS from GCT scores, while those

listed in this report are based on the latter two formulas previously described. Any differences in mental group figures between the initial report and this report are due to that fact.

II. FINDINGS

A. Total Enlisted Personnel

The Number of Personnel (Table 2)

Since the end of the Vietnamese conflict, the total number of enlisted personnel in the Navy has decreased to somewhat less than a half million. Enlisted personnel had risen steadily from a FY 60 figure of 544,040 to 684,145 in FY 69, the peak of U.S. involvement in Southeast Asia, but by FY 72, the Navy was down to 510,669 enlisted personnel, and at the end of FY 76, the 459,707 count marked the lowest number of enlisted personnel in at least the sixteen year period reported in Table 2.

Enlisted Strength v. Requirements: Pay Grades (Table 3)

An unusual pattern of personnel clustering has existed among the apprentice pay grades (E1-E3) since FY 72. E1 and E2 pay grades have been consistently overmanned, while the E3 pay grade has been significantly undermanned. The number of seaman apprentices (E2) in the Navy has been more than double the requirement for the past four years, while the number of seamen (E3) has been about 3/4 or less of the manning requirement for the same period.

There has also been a steady trend of undermanning at the E5 level. This is understandable because first-term enlistments are usually spread through pay grades E1-E4, and the strength of pay grade E5 is obviously dependent upon the number and pay grades of first-term enlistees who

TABLE 2
Total Enlisted Personnel
1960 to 1976

<u>At End of Fiscal Year</u>	<u>Counts</u>
1960	544,040
1961	551,603
1962	584,071
1963	583,596
1964	584,700
1965	587,183
1966	658,635
1967	663,831
1968	673,610
1969	684,145
1970	605,899
1971	542,298
1972	510,669
1973	490,009
1974	474,736
1975	465,522
1976	459,707

TABLE 3

Strength v. Percent of Requirements
Enlisted Pay Grades
1972 to 1976

Pay Grade	1972 Strength % Req.	1973 Strength % Req.	1974 Strength % Req.	1975 Strength % Req.	1976 Strength % Req.
E9	3,654 89.2	3,702 85.7	3,768 88.0	3,556 88.7	3,280 81.3
E8	9,183 95.2	9,001 89.6	8,800 86.5	8,210 84.7	7,785 80.2
E7	36,863 99.2	35,244 97.8	33,740 98.8	31,728 98.6	31,150 98.0
E6	75,515 98.8	71,913 94.0	66,370 89.9	65,929 91.2	65,237 89.9
E5	88,328 90.1	85,059 87.8	80,577 87.1	79,368 87.7	80,087 88.6
E4	105,459 94.3	97,573 89.9	92,044 92.5	93,262 95.8	91,867 95.3
Petty Officer Total	319,002 94.6	302,492 91.0	285,299 90.7	282,053 92.2	279,406 91.7
E3	114,717 95.4	74,744 65.2	82,265 76.9	80,862 75.2	80,304 74.4
E2	50,183 108.5	80,007 207.2	72,803 205.9	72,715 229.6	70,493 244.0
E1	26,767 160.6	32,766 265.4	34,369 191.7	29,892 147.5	26,730 159.4
E1 - E3 Total	191,667 104.6	187,517 113.3	189,437 118.2	183,469 115.0	177,527 115.6
Grand Total	510,669 98.1	490,009 98.4	474,736 100.0	465,522 100.0	456,933 99.7

decide to reenlist. However, the future strength of E5's could be increased as a result of the present over-supply of E1's and E2's, if adequate motivation and potential exist for achieving pay grades E3 and E4, as well as decision by apprentices to reenlist. The critical question which is unanswered at this time is whether the undermanning at the E3 level is indicative of a lack of upward-mobile motivation on the part of a large percentage of E2's or simply a temporary slack in one section of an otherwise more evenly spread E1-to-E4 continuum.

The upper supervisory pay grades continue to be short of required strength. Both E8 and E9 percentages have been down significantly since 1972. As a percent of requirements, E8's lost 15% and E9's almost 8% between 1972 and 1976.

Enlisted Strength v. Requirements: Occupation Groups and Ratings (Table 4)

Strength and requirement figures were examined between 1972 and 1976 for petty officers (E4-E9) for eleven Navy occupation groups and for 78 main ratings groups. It was not possible to divide results for a main rating (e.g., CT) into figures for subratings (e.g., CTT, CTA, CTM, CTO, CTR, CTI) as is done in the remainder of this report.

Manning levels were examined in accordance with Career Reenlistment Objectives (CREO) criteria (see Appendix F) used by the Chief of Naval Personnel to assess the adequacy of manning levels for different ratings. Five CREO rating groups are defined as follows:

- (1) Group A - Rating career manning is less than 75 percent of requirements; extreme shortage of career strength relative to career requirements.
- (2) Group B - Rating career manning is between 75 and 89 percent of requirements; shortage of career strength relative to career requirements.

- (3) Group C - Rating career manning is approximately correct (90-105%); management is designed to stabilize at present levels.
- (4) Group D - Rating career manning is in excess of 105 percent. First-term reenlistments need not be directly controlled, but to reduce overmanning, other actions may be employed, e.g., conversion programs, non-continuation, etc.
- (5) Group E - Rating career manning is in excess of 105 percent; ratings are under direct control of CHNAVPERS. CHNAVPERS approval is required for all first-time reenlistments or extensions to initial enlistment, including extensions on active duty for Naval Reservists. Subsequent reenlistments may require CHNAVPERS approval. CHNAVPERS approval for continuation on active duty beyond 21 years may be required on a case basis. Applicable notes on Open/Closed Rating/Rate Lists apply.

As Table 4 shows, four occupation groups (Deck, Ordnance, Precision Equipment, and Engineering/Hull) were below 90% manning in 1976, while the remainder were within CREO tolerances for normal or excessive (Electronics and Dental) manning.

Thirty-two of the 78 main ratings reported fitted into either CREO Group A or B in FY 76, of which only 6 (MA, SM, GM, NC, BR, AF) were at the Group A, "extreme shortage," level. Virtually the entire Deck, Ordnance, and Precision Equipment occupation groups were at the A/B manning level, with a large number of ratings from the Administration, Engineering/Hull, and Aviation occupation groups also experiencing significant shortages. While some ratings have been consistently undermanned in recent years (i.e., BM, EW, MA, OS, OT, QM, SM, IM, OM, LN, NC, BR, BT, HT, IC, CU, AC, AO, AV), others (GM, MN, MT, TM, CT, IS, LI, AB, AE, AM, AF, PH, PR, and TD) either were at low manning in FY 76 or have fluctuated, mostly worsening, over the years reported. Of the six ratings which were extremely short of personnel (Group A) in FY 76, four of these (GM, NC, BR, and AF) have had a declining trend for several years.

TABLE 4

Strength v. Percent of Requirements
Ratings and Navy Occupation Groups
(Petty Officers)
1972 to 1976

Rating	1972 Strength	1972 % Req.	1973 Strength	1973 % Req.	1974 Strength	1974 % Req.	1975 Strength	1975 % Req.	1976 Strength	1976 % Req.
BM	10,790	88	9,341	86	8,813	88	8,258	88	7,910	88
EW	792	44	1,024	50	1,242	65	1,340	71	1,534	80
MA	--	--	--	--	437	76	530	69	581	74
OS	6,337	83	5,379	80	4,782	78	4,717	76	4,812	79
OT	738	73	858	87	800	73	838	71	978	84
QM	3,831	78	3,505	77	3,294	85	3,188	87	3,069	85
SM	3,278	88	2,753	85	2,250	77	2,031	70	1,931	71
ST	5,793	99	5,484	97	5,317	96	5,136	94	5,382	97
Deck Total	31,559	85	28,344	83	26,935	84	26,038	83	26,197	85
FT	8,268	100	7,868	96	7,136	92	6,730	89	7,163	93
GM	7,581	91	6,435	81	5,629	76	5,283	73	5,013	71
MN	433	82	437	83	410	83	392	77	413	85
MT	1,379	99	1,368	100	1,208	103	1,272	97	1,530	88
TM	3,951	90	3,745	89	3,423	84	3,179	84	3,026	86
Ordnance Total	21,612	94	19,853	89	17,806	85	16,856	83	17,145	84
DS	1,615	85	1,698	103	1,686	107	1,779	109	1,853	104
ET	19,962	117	19,396	111	17,337	112	16,354	109	15,905	106
Electronics Total	21,577	114	21,094	111	19,023	112	18,133	109	17,758	106

TABLE 4 (cont'd)

Strength v. Percent of Requirements
Ratings and Navy Occupation Groups
(Petty Officers)
1972 to 1976

Rating	1972		1973		1974		1975		1976	
	Strength	% Req.	Strength	% Req.	Strength	% Req.	Strength	% Req.	Strength	% Req.
IM	314	75	339	80	347	83	344	88	345	86
OM	282	91	274	91	264	82	246	78	255	84
PI	8	73	7	64	8	80	12	133	14	156
Prec. Equip. Total	604	82	620	85	619	83	602	84	614	86
CS	8,341	89	7,350	83	6,546	75	--	--	--	--
CT	10,076	107	9,365	108	7,754	95	6,970	87	7,068	89
DK	1,990	99	1,960	97	1,933	101	1,941	100	1,915	101
DP	2,519	98	2,668	98	2,783	118	2,642	115	2,459	100
IS	--	--	--	--	--	--	349	--	751	86
JO	466	84	447	80	552	92	686	109	666	104
LN	--	--	270	63	292	59	357	86	375	88
MS	--	--	--	--	--	--	12,569	92	12,916	94
NC	--	--	--	--	672	74	366	70	728	67
PC	1,039	101	918	87	1,026	110	999	106	870	93
PN	5,888	89	6,092	93	5,981	105	5,901	102	5,698	99
RM	15,614	95	15,759	95	13,118	86	12,313	86	12,651	91
SD	7,179	125	6,964	128	6,513	132	--	--	--	--
SH	4,046	88	3,479	80	3,287	77	3,424	82	3,740	92
SK	9,402	95	8,054	85	7,510	85	7,755	93	7,744	95
YN	12,319	90	10,708	89	9,950	95	9,776	95	9,130	93
Admin./Cler. Total	78,879	96	74,034	94	67,245	93	52,764	92	66,711	93

TABLE 4 (cont'd)

Strength v. Percent of Requirements
Ratings and Navy Occupation Groups
(Petty Officers)
1972 to 1976

Rating	1972 Strength % Req.	1973 Strength % Req.	1974 Strength % Req.	1975 Strength % Req.	1976 Strength % Req.
DM	378 87	429 97	445 125	424 118	333 98
LI	403 98	386 91	339 88	369 88	350 86
MU	994 73	1,102 81	1,010 87	980 109	873 97
Miscellaneous Total	1,775 81	1,917 86	1,794 94	1,773 106	1,556 94
BR	192 79	180 71	160 54	134 47	114 43
BT	8,053 78	7,499 74	7,001 73	6,969 76	6,969 77
EM	10,930 94	10,732 90	10,242 89	10,286 95	10,392 95
EN	8,121 87	7,235 87	6,785 95	6,641 104	6,158 95
HT	8,804 86	7,738 73	7,110 70	7,533 80	7,876 84
IC	4,638 91	4,183 78	4,199 79	4,454 85	4,527 87
ML	178 90	168 91	167 85	162 82	174 98
MM	17,596 85	19,792 90	19,420 90	19,428 91	19,399 90
MR	2,115 86	1,938 77	1,897 79	1,994 89	2,076 94
PM	131 93	138 105	146 99	153 103	145 110
Eng./Hull Total	60,758 86	59,603 83	57,127 84	57,754 89	57,830 89
BU	1,705 72	1,551 71	1,708 79	1,922 94	1,862 100
CE	1,141 86	1,040 80	1,127 85	1,185 98	1,133 102
CM	1,231 97	1,100 90	1,100 89	1,126 94	1,077 95
CU	36 68	36 68	39 80	40 80	42 86
EA	269 79	247 74	315 101	352 119	292 109
EO	2,070 102	1,735 90	1,643 88	1,606 97	1,501 100
EQ	29 94	32 94	33 94	37 98	34 97

TABLE 4 (cont'd)

Strength v. Percent of Requirements
Ratings and Navy Occupation Groups
(Petty Officers)
1972 to 1976

Rating	1972 Strength % Req.	1973 Strength % Req.	1974 Strength % Req.	1975 Strength % Req.	1976 Strength % Req.
SW	631	83	628	611	604
UT	843	72	915	1,013	1,007
Construction Total	7,955	85	7,508	7,892	7,552
AB	3,819	93	3,575	3,473	3,474
AC	2,177	84	2,224	2,148	2,109
AD	12,863	96	11,319	10,697	9,925
AE	7,463	101	5,931	6,148	6,206
AF	367	80	379	327	287
AG	1,414	82	1,430	1,432	1,396
AK	3,083	100	3,440	3,144	2,983
AM	12,378	92	11,782	11,298	11,255
AO	5,188	102	3,737	3,946	3,948
AQ	3,365	101	3,345	3,453	3,354
AS	1,792	94	1,858	1,768	1,660
AT	10,330	100	9,079	9,338	9,219
AV	279	84	290	255	249
AW	2,248	91	1,900	2,074	2,328
AX	901	37	1,110	1,396	1,704
AZ	2,314	97	2,753	2,618	2,418
PH	1,928	90	2,023	1,887	1,600
PR	1,660	95	1,359	1,290	1,251

TABLE 4 (cont'd)

Strength v. Percent of Requirements
Ratings and Navy Occupation Groups
(Petty Officers)
1972 to 1976

Rating	1972		1973		1974		1975		1976	
	Strength	% Req.	Strength	% Req.	Strength	% Req.	Strength	% Req.	Strength	% Req.
PT	452	100	454	92	446	99	217	42	--	--
TD	1,657	103	1,583	103	1,403	97	1,196	81	1,233	79
Aviation Total	75,678	94	72,117	93	69,383	102	68,105	94	66,599	91
HM	16,467	105	15,578	92	14,903	95	16,039	105	15,302	104
Medical Total	16,467	105	15,578	92	14,903	95	16,039	105	15,302	104
DT	2,138	97	2,216	96	2,284	107	2,456	119	2,142	111
Dental Total	2,138	97	2,216	96	2,284	107	2,456	119	2,142	111
Occupations/ Ratings Total	319,002	93	302,582	90	284,627	92	268,412	92	279,406	92

Age Distribution (Table 5)

Trend figures from FY 60 to the present emphasize clearly that the U.S. Navy is a young person's organization. No less than three of every four sailors have been under 30 years of age in each year of the 16-year period shown in Table 5, with the proportion reaching four of five or higher at the peak (1968-71) of the Vietnam conflict.

A few interesting trends in age are discernible. Although the percent of enlisted personnel 20 years old and under decreased markedly during the Vietnam period (down to 18.7% in 1971), there has been a steady upswing in that group since the end of the conflict (up to 30% or more in 1974-76). Although the increases were smaller, the same pattern of rising percentages since Vietnam is found for those in the age categories 25 through 39.

By contrast, the 21-24 year-old age group rose during Vietnam and fell off during the post-war period. For the first time since the early 1960's, the 21-24 year-old count is being overtaken by greater numbers of younger sailors.

Two probable happenings are suggested by the rising trends in the 20 year-old and younger and in the 25-39 year-old categories, as compared to the decreasing 21-24 year-old category. First, the attractiveness of the Navy to 20 year-old and younger personnel seems to have been a characteristic of pre- and post-Vietnam when often one sailor in three was or has been in this category. Second, the drop in percentages for 21 to 24 year-olds in recent years suggests that a great number of personnel inducted during Vietnam from that age group (no doubt, many of them were college students and graduates) chose not to pursue a Navy career, but simply to serve out an obligation during the Southeast Asia commitment.

TABLE 5
Percent of Total Enlisted Personnel
by Age Categories
1960 to 1976

At End of Fiscal Year	Counts	20 & Less	21-24	25-29	30-34	35-39	40-44	45-49	50 & Over
1960	544,040	32.8%	29.5%	12.1%	11.6%	9.9%	3.1%	0.8%	0.2%
1961	551,603	32.8	30.1	12.5	10.9	9.7	3.0	0.8	0.2
1962	584,071	32.9	30.8	13.3	9.8	9.3	3.0	0.8	0.2
1963	583,596	29.6	33.2	14.6	9.5	9.0	3.0	0.8	0.2
1964	584,700	27.1	35.1	15.5	9.4	8.7	3.2	0.8	0.2
1965	587,183	27.4	34.1	16.2	9.1	8.6	3.4	0.8	0.2
1966	658,635	30.6	34.2	14.9	8.6	7.3	3.3	0.9	0.2
1967	663,831	26.0	38.9	14.9	9.5	6.5	3.0	0.9	0.2
1968	673,610	22.5	44.0	14.0	9.8	5.8	2.6	0.9	0.2
1969	684,145	22.2	46.8	13.0	9.0	5.5	2.3	0.9	0.2
1970	605,899	20.9	45.5	13.0	10.4	6.9	2.4	1.0	0.2
1971	542,298	18.7	43.8	14.5	11.4	8.0	2.4	1.0	0.2
1972	510,669	20.9	39.4	15.3	11.4	9.2	2.6	1.0	0.2
1973	490,009	24.1	35.2	15.5	11.1	10.3	2.8	1.0	0.2
1974	474,736	31.5	30.8	14.2	10.4	9.4	2.6	0.8	0.2
1975	465,522	30.8	31.1	15.1	10.5	9.0	2.5	0.8	0.2
1976	459,707	31.0	30.1	16.4	10.5	8.7	2.4	0.7	0.2

*Less than 0.1%

Sex Distribution (Table 6)

Males comprise the vast majority of total enlisted personnel, at 95.8% of the total at the end of FY 76. However, the increase in the fraction of women in the Navy since 1970, while not large, at least has been fairly substantial as compared to the seven years prior to 1970. Although figures for the 1963-1970 time frame show that enlisted Waves made up less than 1% of the total enlisted force for each year in that period, women rose from 1.1% to 4.2% of total enlisted between 1972 and 1976, and the number of women almost quadrupled (going from 5,617 to 19,308). The Bureau of Naval Personnel has projected female enlisted personnel to 30,000 by FY 83.¹

Race Distribution (Table 7)

The most prominent racial characteristic of enlisted personnel is, and has been over the years, that sailors are predominantly White.² Presently, over 86% of the enlisted ranks are White. Although White counts exceed all other racial groups combined by almost nine-to-one, the percentage of Whites in fact decreased from 90.2% to 86.2% from 1971 to 1976. Normally, a mere four percent change would appear to be insignificant, except that there had been virtually no change in the White-to-non-White proportion over the ten-year period prior to 1971, remaining

¹Telephone conversation with Lt. Schwartz (694-1061) of the Bureau of Naval Personnel in April, 1977.

²Race is determined from that reported by Navy personnel when enlisting in the Navy. For purposes of this report, "White" is synonymous with "Caucasian"; "Black," with "Negro."

TABLE 6

Total Enlisted Personnel
Percent Male and Female
1963 to 1976

At End of Fiscal Year	Counts	% Male	% Female
1963	583,596	99.1	0.9
1964	584,700	99.2	0.8
1965	587,183	99.2	0.8
1966	658,635	99.2	0.8
1967	663,831	99.2	0.8
1968	673,610	99.2	0.8
1969	684,145	99.2	0.8
1970	605,899	99.1	0.9
1971	542,298	98.0	2.0
1972	510,669	98.9	1.1
1973	490,009	98.2	1.8
1974	474,736	97.2	2.8
1975	465,522	96.3	3.7
1976	459,707	95.8	4.2

TABLE 7
Percent of Total Enlisted Personnel
by Race Categories
1972 to 1976

At End of Fiscal Year	Counts	White	Black	Other
1962	584,071	92.0%	5.2%	2.8%
1963	583,596	91.7	5.4	2.9
1964	584,700	91.3	5.7	3.0
1965	587,183	90.9	5.9	3.2
1966	658,635	91.6	5.4	3.0
1967	663,831	91.9	4.9	3.2
1968	673,610	91.8	4.7	3.4
1969	684,145	91.1	5.3	3.6
1970	605,899	90.4	5.6	4.0
1971	542,298	90.2	5.4	4.4
1972	510,669	89.0	6.4	4.6
1973	490,009	87.3	7.7	5.0
1974	474,736	86.4	8.4	5.2
1975	465,522	86.4	8.0	5.6
1976	459,707	86.2	8.1	5.7

fairly even at 9-to-1.

Blacks accounted for 8.1% of the enlisted ranks in FY 76, as compared to 5.4% in 1971. Like Whites, the Black percentage stayed relatively the same in the decade prior to 1971, but, unlike Whites, increased subsequent to 1971. All other racial groups represented 5.7% of enlisted personnel in FY 76, having increased slightly, virtually in every year after 1962.

The trend toward a small decrease in the percentage gap between Whites and non-Whites in recent years is related to a sharp reduction in White counts and a steady increase in non-White counts after Vietnam. From FY 71 to FY 76, the number of White enlisted men declined by about 92,500, while non-Whites, by contrast, increased by more than 10,000.

Years-of-Education (Tables 8 and 9)

One of the most salient changes among enlisted personnel in recent years has been the dramatic increase in years of civilian education. Whereas almost half of the enlisted ranks was made up of members with less than a high school education in 1960, today that group composes only about 15% of the total. A corresponding increase in high school graduates and sailors with college training has also occurred. Table 8 shows that in FY 60, 46.8% of the enlisted force were high school graduates, while in FY 76 (after even higher percentages during the Vietnamese conflict) 85.1% were high school graduates. During the same period, the proportion of personnel who attended some, or graduated from, college rose from 4.1% to 11.9%. The percent of personnel with at least a bachelor's degree rose substantially during Vietnam, and then leveled off afterward at just over 1%, a figure greater than twice the percentage of that before Vietnam.

TABLE 8

Percent of Total Enlisted Personnel
by Educational Degrees
1960 to 1976

At end of Fiscal Year	Count	Less than High School Graduation	High School Graduation Only	Some College (less than 4 years)	Bachelor or Higher Degree	Total High School Graduates	Unknown
1960	544,040	47.7%	42.7%	3.8%	0.3%	46.8%	5.5%
1961	551,603	47.5	46.6	4.2	0.5	51.2	1.4
1962	584,071	47.5	47.3	4.8	0.4	52.5	--
1963	583,596	45.5	48.6	5.4	0.5	49.7	--
1964	584,700	42.9	50.5	6.2	0.4	57.1	--
1965	587,183	42.0	51.1	6.5	0.4	58.1	--
1966	658,635	24.1	65.4	9.9	0.6	75.9	--
1967	663,831	18.6	67.9	12.6	0.9	81.4	--
1968	673,610	14.6	69.1	15.0	1.3	85.4	--
1969	684,145	13.7	69.6	15.0	1.7	86.2	--
1970	605,899	13.8	69.3	14.8	2.1	86.2	--
1971	542,298	12.9	70.1	14.7	2.3	87.1	--
1972	510,669	12.7	71.5	13.6	2.2	87.3	--
1973	490,009	14.8	71.3	12.1	1.7	85.2	--
1974	474,736	15.4	72.4	11.0	1.2	84.6	--
1975	465,522	15.1	73.0	10.8	1.1	84.9	--
1976	459,707	14.9	73.3	10.8	1.1	85.1	--

Note: For purposes of this report, the term "degree" applies to a high school diploma as well as a college degree.

Although the percent of high school graduates has risen sharply, there has been a slight decline in recent years in the percent of personnel with education beyond 12 years. As Table 9 illustrates, 15.8% of Navy personnel had 13-20 years of education in 1972 as compared to 11.7% in 1976.

Aptitude Scores and Mental Group Distribution (Tables 10 to 20)

Table 10 shows that the average GCT has, in general, remained stable at 54 in the last few years; although there has been some variation by sex, race, and education. Females (see Table 11) have scored slightly better than males on this subtest, and Whites (see Table 12) have had consistently higher scores than non-Whites. However, since 1973, all racial groups mentioned in this report have shown slight improvements in their average GCT scores.

Table 13 shows that the GCT subtest correlates positively with the level of formal education achieved; that is, the higher the educational level, the higher the average GCT score. Yet, it is interesting to note that since 1972 there has been a slight converging trend in average GCT scores between lowest and highest educational levels. Although "no degree" and "college degree" personnel were separated by 20 points in GCT in 1973, by 1976 the difference between the two had decreased to only 11. This convergence results from a gradual increase in average scores for "no degree" personnel and a decrease for personnel with college degrees between 1973-76.

Table 14 shows that the percent of "school eligibles" (Mental Groups I, II, and Upper III) fell off after 1972; "bottomed" in 1974; and rose

TABLE 9

Percent of Total Enlisted Personnel by Years of Education
1972 to 1976

Years of Education	1972	1973	1974	1975	1976
1-8	1.5%	1.5%	1.2%	0.9%	0.6%
9-12	82.7	84.9	86.6	87.3	87.7
13-20	15.8	13.6	12.2	11.8	11.7

TABLE 10

Average GCT* for Total Enlisted Personnel
1972 to 1976

Year	GCT
1972	52
1973	54
1974	54
1975	54
1976	54

*1976 gives the average score for GCT for the first six months and for WK for the second six months (denoted by GCT/WK)

TABLE 11

Total Enlisted Personnel
Average GCT* by Male and Female
1972 to 1976

Year	Male	Female	Total
1972	52	58	52
1973	54	58	54
1974	53	57	54
1975	54	57	54
1976	54	57	54

*1976 gives the average score for GCT for the first six months and for WK for the second six months (denoted by GCT/WK)

TABLE 12

Total Enlisted Personnel
Average GCT* by Race Categories
1972 to 1976

Year	White	Black	Other	Total
1972	53	45	46	52
1973	55	45	41	54
1974	55	45	41	54
1975	55	46	42	54
1976	56	47	43	54

*1976 gives the average score for GCT for the first six months and for WK for the second six months (denoted by GCT/WK)

TABLE 13

Average GCT¹ Scores for Total Enlisted Personnel
by Educational Degrees
1972 to 1976

Degree ²	1972	1973	1974	1975	1976
No Degree	46	46	46	47	49
H.S. Diploma	52	55	54	54	54
H.S. GED ³	50	51	51	52	53
H.S. Dipl. + Coll.	56	62	61	60	60
College Degree	59	66	64	61	60
TOTAL	52	54	54	54	54

¹1976 gives the average score for GCT for the first six months and for WK for the second six months (denoted by GCT/WK).

²For purposes of this report, the term "degree" applies to a high school diploma as well as a college degree.

³GED: General Educational Development. The equivalent of a high school diploma is obtained by many Service personnel through the General Educational Development program of most states.

TABLE 14

Percent of Total Enlisted Personnel
in the Different Mental Group Categories
1972 to 1976

Mental Group	1972	1973	1974	1975	1976
I	7.6	6.9	6.0	5.6	6.1
II	43.0	41.1	39.1	39.6	41.2
Upper III	24.2	24.8	25.7	26.9	27.3
I, II, U III	74.8	72.8	70.8	72.1	74.6
Lower III	15.0	17.2	19.4	20.0	18.9
IV	10.1	10.2	9.9	7.9	6.5
V	--	--	--	--	--

virtually to the 1972 percent again by the end of FY 76. Although the percent of "school eligibles" (1972 v. 1976) remained the same, there were drops in percent of Mental Group I (7.6% to 6.1%) and Mental Group II (43.0% v. 41.2%) personnel for the same comparative years. These percent losses were offset by a 3.1% rise in Mental Group III (upper) personnel. Interestingly, a corresponding percent shift from Mental Group IV into Mental Group III (lower), in comparing 1972 with 1976, illustrates that mental group distributions for total personnel have had a tendency to cluster more toward the middle in the most recent years. In point of fact, the total Mental Group III percentage jumped from 39.2% to 46.2% between 1972 and 1976.

Mental group patterns are somewhat different by sex. As Table 15 indicates, females have maintained a noticeably higher percent of "school eligibles" than males in the years reported, although this percentage, unlike the percentage of males who are school eligibles, has dropped sharply since 1972, from 98.6% to 81.8%. These losses for females are probably explained by significant increases in quantity since 1972 resulting in some reduction in quality. Nevertheless, 82% of females -- as compared to 74% of males -- were in Mental Groups I, II, Upper III at the end of the 1976 fiscal year.

Mental group distribution by race shows a pattern similar to that seen for GCT. Table 16 shows that in recent years White percentages of school eligibles has been two-to-four times those consisting of non-White personnel. Yet, White percentages in Mental Groups I and II fell off slightly each year between 1972-75, while "Black" and "Other"

TABLE 15

Percent of Enlisted Personnel in Mental Group Categories
by Male and Female
1972 to 1976

Mental Group	Male					Female				
	1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
I	7.6	6.9	6.0	5.6	6.1	6.0	6.1	7.0	5.7	4.7
II	42.9	41.0	39.0	39.5	41.2	51.3	50.5	50.3	45.0	42.5
Upper III	24.0	24.7	25.6	26.8	27.1	41.2	38.1	32.1	33.7	34.6
I, II, U III	74.5	72.6	70.5	71.9	74.4	98.6	94.6	89.4	84.3	81.8
Lower III	15.2	17.1	19.5	20.1	19.0	1.1	4.4	9.0	13.8	16.6
IV	10.3	10.3	10.0	8.0	6.6	0.3	1.0	1.7	1.9	1.6
V	--	--	--	--	--	--	--	--	--	--

TABLE 16

Percent of Enlisted Personnel in Mental Group Categories
by Race Categories
1972 to 1976

Mental Group	White					Black					Other				
	1972	1973	1974	1975	1976	1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
I	8.5	7.7	6.9	6.4	7.0	0.4	0.4	0.3	0.3	0.6	0.5	0.6	0.5	0.4	0.6
II	47.3	45.0	43.9	44.4	46.0	11.0	9.9	9.8	10.6	14.2	6.6	6.6	6.4	6.2	7.4
Upper III	25.1	25.5	26.4	27.3	27.2	20.4	20.1	21.7	23.8	27.6	13.8	16.2	20.2	25.6	27.9
I, II, U III	80.9	78.2	77.2	78.1	80.2	31.8	30.4	31.8	34.8	42.4	20.9	23.4	27.1	32.2	35.9
Lower III	13.2	15.1	16.8	17.2	16.2	28.3	32.1	37.7	41.6	39.4	31.3	34.0	32.1	31.2	31.0
IV	5.9	6.7	59.5	4.7	3.6	39.9	37.5	30.5	23.6	18.1	47.7	42.7	40.8	36.6	33.1
V	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

personnel showed increases overall in Mental Groups I, II and Upper III for 1972-76. It would appear that the most significant trend since 1972 has been a sharp increase in the proportion of non-White "school eligibles."

Tables 17, 18, 19, and 20, compare mental group distribution with levels of civilian education for the 1972-76 period. These data show that educational level does not significantly discriminate among different mental group categories. Table 17 shows that at the end of fiscal year 1976 "No Degree" personnel had made a large gain in their shares of Mental Groups I, II, and Upper III as compared to 1972, despite a decrease from 87.3% to 85.1% between 1972 and 1976 (Table 8) in the percent of total high school graduates. Notice further that both high school graduates as a percent of each upper mental group category (Table 18) and the percent of high school graduates in Mental Groups I and II (Table 19) showed declines during most or all of the 1972-76 period.

Table 20 provides additional evidence that a person's education level is not a completely useful predictor of his mental group level. While the fractions of personnel with high school diplomas or college degrees actually decreased in Mental Groups I and II from 1972 to 1976, fractions of those with no degree at all significantly increased in the upper mental group categories.

It is predictable that overall there will always be a positive correlation between civilian education level and mental group level. On the average, therefore, the higher one's educational degree, the higher ought to be his mental group classification. Nevertheless, Tables 17-20

TABLE 17

Total Enlisted Personnel in Mental Group Categories
Percent Distribution by Education Degrees
1972 v. 1976

Degrees ^a	I		II		U III		I, II & U III		L III		IV	
	1972	1976	1972	1976	1972	1976	1972	1976	1972	1976	1972	1976
No Degree	1.4	2.9	5.0	8.3	12.6	18.0	7.1	11.4	21.7	25.6	37.0	17.3
H.S. Diploma ^b	51.0	59.3	66.4	68.8	65.5	63.3	64.5	66.0	58.3	58.8	49.0	70.0
H.S. GED ^c	3.0	4.4	8.6	8.9	13.7	10.6	9.7	9.1	15.2	11.0	11.4	8.6
H.S. Grad. + ^d Some College	37.2	30.4	17.2	13.0	7.1	7.1	16.0	12.3	4.4	4.2	2.6	3.7
College Deg. ^e	7.4	3.0	2.8	1.0	1.0	1.0	2.7	1.2	0.4	0.4	0.1	0.3

^aFor purposes of this report, the term "degree" applies to a high school diploma as well as a college degree.

^bHigh school diploma earned from a civilian school

^cGED: The equivalent of high school graduation from a General Educational Development program

^dHigh school graduation and some college work, but no college degree

^eAt least a Bachelor's degree

TABLE 18

Percent of Total Enlisted Personnel in
Each Mental Group Category Who Were High School Graduates*
1972 to 1976

Mental Group	1972	1973	1974	1975	1976
I	98.6%	98.5%	98.5%	98.5%	97.1%
II	95.0	94.2	93.9	93.3	91.7
Upper III	87.4	84.9	83.2	82.1	82.0
I, II, U III	92.9	91.4	90.4	89.5	88.6
Lower III	78.3	73.4	70.4	69.2	74.4
IV	63.0	60.5	69.5	75.5	82.7
V	--	--	--	--	--

*Including high school GED

TABLE 19

Total Enlisted High School Graduates^{*}
Distribution by Mental Groups
1972 to 1976

Mental Group	1972	1973	1974	1975	1976
I	8.5%	8.0%	7.0%	6.5%	6.9%
II	46.6	45.5	43.5	43.8	44.2
Upper III	24.2	24.7	25.2	26.2	26.1
I, II, U III	79.3	78.2	75.7	76.5	77.2
Lower III	13.4	14.6	16.2	16.4	16.5
IV	7.3	7.2	8.1	7.1	6.3
V	--	--	--	--	--

^{*}Including high school GED

TABLE 20

Mental Group Distributions for Total Personnel with
a College Degree, a High School Diploma Only, No Degree
1972 to 1976

Mental Group	1972	1973	1974	1975	1976
<u>College Degree</u>					
I	26.7	25.4	22.0	18.1	18.4
II	58.1	56.6	54.0	49.3	44.2
Upper III	11.5	13.1	16.5	23.9	28.1
I, II, U III	96.4	95.1	92.5	91.2	90.8
Lower III	2.9	3.9	5.8	6.9	7.3
IV	0.7	0.9	1.7	1.9	1.9
V	--	--	--	--	--
<u>H.S. Diploma</u>					
I	6.2	6.0	5.4	5.1	5.6
II	46.0	45.2	43.1	43.2	43.7
Upper III	25.6	25.8	26.0	26.7	26.6
I, II, U III	77.9	77.0	74.5	75.1	75.9
Lower III	14.1	15.2	16.7	17.2	17.1
IV	8.0	7.8	8.8	7.8	7.0
V	--	--	--	--	--
<u>No Degree</u>					
I	0.8	0.7	0.6	0.4	1.2
II	17.4	16.1	15.5	17.0	23.5
Upper III	24.8	25.3	27.7	30.7	33.9
I, II, U III	43.0	42.2	43.8	48.2	58.7
Lower III	26.5	30.6	36.9	39.4	33.5
IV	30.5	27.2	19.4	12.4	7.8
V	--	--	--	--	--

provide evidence that civilian schooling is not a reliable predictor of mental potential.

B. Enlisted Accessions

The characteristics of enlisted accessions were examined in order to gain some insight into the quality of personnel being inducted into the Naval Service nowadays. Two kinds of information are included in the present report. The first kind includes demographic, educational, and aptitude information. Most of this information is reported for Seamen (SN), Firemen (FN), Constructionmen (CN), and Airmen (AN) in pay grade E1 (recruits), so that recruitment trends can be examined by broad apprenticeship groups. The second kind of information consists of the reading ability of recruits. Most of the information on reading ability was contained in the preliminary analysis of Navy Personnel characteristics,¹ and it is repeated in this report because of its paramount implications for designing appropriate information presentation vehicles for future Fleet technicians.

Counts (Table 21)

Approximately 92% to 97% of personnel in pay grade E1 during the 1972-76 time period were found to be designated in one of the four apprenticeship groups: Seaman, Fireman, Constructionman, Airman, (hereafter referred to in total as SFCA). With such a high percent of the E1 personnel, the four groups are considered to be a reasonably accurate

¹Thomas E. Powers, Navy Enlisted Personnel Characteristics -- Preliminary Analysis. Rockville, Md.: ManTech Corporation of New Jersey, 30 June 1976.

TABLE 21

Recruits: Pay Grade E1
 Counts for Seamen, Firemen, Constructionmen, Airmen
 1972 to 1976

	1972	1973	1974	1975	1976
Seamen	18,727	16,992	22,008	19,489	24,273
Firemen	2,900	4,423	5,762	2,969	5,033
Constructionmen	292	371	311	121	296
Airmen	4,007	3,206	4,425	2,341	5,390
Total S, F, C, A ^a	25,926	24,992	32,506	24,920	34,992
All other ^b	841	2,306	1,863	1,977	2,002
GRAND TOTAL	26,767	27,298	34,369	26,897	36,994
Percent ^c	96.9%	91.6%	94.6%	92.6%	94.6%

^aTotal S, F, C, A = recruits designated for Seaman, Fireman, Constructionman, Airman apprenticeships

^bAll other enlisted personnel in pay grade E1

^cPercent of GRAND TOTAL consisting of total Seamen, Firemen, Constructionmen, and Airmen

index of total E1 trends. At the same time it is possible to examine specific information about each apprenticeship group. Table 21 shows that total SFCA E1 counts increased by 9,000 between 1972 and 1976, with SN's receiving the greatest actual increase (c 5,500), but with FN's inputs also increasing substantially (from 2,900 to 5,033.)¹

Age Distribution (Table 22)

Table 22 shows that between 1972-76 85% to almost 90% of personnel in pay grade E1 were 20 years of age or younger. Only in 1975, when counts (see Table 21) were at their lowest for the 1972-76 period, did E1's over 20 years of age hold an exceptionally higher share of the recruit population.

Sex Distribution (Table 23)

While SFCA E1's were overwhelmingly male (93% to 99% between 1972 and 1976), females increased their share substantially in the SN and AN groups. Although a few female recruits were assigned to the FN apprenticeship during the period, CN E1's remained 100% male. The decrease in percentage of SN E1's by females in 1976 was offset partially by an increase in percentage of AN E1's.

Race Distribution Table 24)

Race patterns for SFCA E1's have been mixed. Non-White E1 inputs fluctuated for each apprenticeship group between 1972-76. The Black percentages of total SFCA recruits decreased slightly in 1975-76 as compared to 1972-74, while for "other" non-Whites, the percentages went up

¹The reason for the unusually high percentage increases (73.5%: 2900 to 5033) in FN recruits between 1972 and 1976 might have been designed purposely to offset sharp losses in E3 personnel for the same period (from 12,713 down to 5,916).

TABLE 22

Percent of Recruits (Pay Grade E1) in Age Categories
Seamen, Firemen, Constructionmen, Airmen
1972 to 1976

Year	Age					
	20 & Less	21-24	25-29	30-34	35-39	40-44
<u>Seamen</u>						
1972	89.6	9.7	0.6	*	*	--
1973	84.9	14.1	0.8	0.1	*	*
1974	80.2	17.5	2.1	0.2	*	*
1975	73.8	22.8	3.2	0.2	*	--
1976	85.4	12.7	1.8	0.1	*	--
<u>Firemen</u>						
1972	88.1	10.9	0.9	*	--	--
1973	85.0	14.2	0.7	0.1	--	--
1974	83.4	15.8	0.8	*	--	--
1975	74.1	23.8	1.9	0.1	--	--
1976	87.4	11.4	1.1	0.1	--	--
<u>Const.</u>						
1972	90.4	9.3	0.3	--	--	--
1973	74.9	23.2	1.9	--	--	--
1974	66.1	32.3	1.3	0.3	--	--
1975	68.6	25.6	5.0	0.8	--	--
1976	88.5	11.1	0.3	--	--	--
<u>Airmen</u>						
1972	88.4	10.9	0.7	--	--	--
1973	84.5	14.9	0.5	0.1	--	--
1974	81.9	17.0	1.0	0.1	--	--
1975	71.1	26.7	2.1	0.1	*	--
1976	85.3	12.8	1.6	0.2	--	--
<u>Total^a</u>						
1972	89.2	10.0	0.7	*	--	--
1973	84.8	14.4	0.8	*	*	*
1974	80.9	17.3	1.7	0.2	*	*
1975	73.6	23.3	2.9	0.2	*	--
1976	85.7	12.5	1.7	0.1	*	--

* Less than 0.1%

^aTotal = SN, FN, CN, AN

TABLE 23

Percent of Recruits (Pay Grade E1) in Sex Categories
Seamen, Firemen, Constructionmen, Airmen
1972 to 1976

Year	Sex	
	Male	Female
<u>Seamen</u>		
1972	98.9	1.1
1973	90.6	9.4
1974	90.9	9.1
1975	90.9	9.1
1976	95.9	4.1
<u>Firemen</u>		
1972	100.0	--
1973	99.9	*
1974	99.9	*
1975	100.0	--
1976	99.7	0.3
<u>Const.</u>		
1972	100.0	--
1973	100.0	--
1974	100.0	--
1975	100.0	--
1976	100.0	--
<u>Airmen</u>		
1972	99.1	0.9
1973	98.8	1.2
1974	99.5	0.5
1975	99.5	0.5
1976	94.8	5.2
<u>Total</u> ^a		
1972	99.1	0.9
1973	93.5	6.5
1974	93.8	6.2
1975	92.8	7.2
1976	96.3	3.7

* Less than 0.1%

^aTotal = SN, FN, CN, AN

TABLE 24

Percent of Recruits (Pay Grade E1) in Race Categories
Seamen, Firemen, Constructionmen, Airmen
1972 to 1976

Year	Race		
	White	Black	Other
<u>Seamen</u>			
1972	80.8	17.1	2.0
1973	84.7	14.0	1.3
1974	81.9	14.2	4.0
1975	85.5	9.6	4.9
1976	84.0	13.3	2.7
<u>Firemen</u>			
1972	86.1	11.4	2.5
1973	87.5	11.2	1.2
1974	86.8	11.9	1.3
1975	90.0	8.1	1.9
1976	91.9	6.3	1.8
<u>Const.</u>			
1972	92.8	5.1	2.1
1973	93.0	6.7	0.3
1974	90.0	8.7	1.3
1975	96.7	1.7	1.7
1976	96.6	3.0	0.3
<u>Airmen</u>			
1972	75.9	21.2	2.9
1973	82.0	17.1	0.9
1974	78.8	19.6	1.6
1975	85.0	12.8	2.1
1976	83.7	13.6	2.8
<u>Total^a</u>			
1972	80.8	17.0	2.2
1973	85.0	13.8	1.2
1974	82.4	14.5	3.2
1975	86.1	9.7	4.3
1976	85.2	12.2	2.6

* Less than 0.1%

^aTotal = SN, FN, CN, AN

and down between 1972 and 1976. At the end of FY 76, the non-White E1 share of each apprenticeship was: AN (16.3%), SN (16.0%), FN 8.1%), and CN (3.4%).

Years-of-Education (Tables 25 and 26)

A sharp rise in the percent of high school graduates among enlisted accessions occurred in 1966 with the beginning of American involvement in Vietnam, and the figure has remained high ever since. Table 25 shows that for the entire FY 76, 84.7% of total accessions were high school graduates. Table 26, which reports educational level for those SFCA recruits on active duty at the end of each fiscal year between 1972 and 1976, shows overall increases in the percent of high school graduates for each apprenticeship for the 1972-76 period.¹ FN and AN percents jumped substantially in 1975 and 1976, with SN percents also increasing but less sharply for the two-year period. Of the four apprenticeships, the FN group has been far less inclined than the other three to attract personnel in the higher educational levels. Although 61.7% of FN's in pay grade E1 at the end of FY 76 had at least a high school diploma, the percents for SN's, CN's, and AN's were 73.7%, 72.3% and 72.1% respectively.

Aptitude Scores (Tables 27, 28; Figure 2)

The fact that enlisted personnel coming into the Navy have had more civilian education than in the past raises a question as to whether a sailor better prepared in fundamental skills is being recruited by the

¹The end-of-the-FY high school graduate figures of Table 26 (calculated by subtracting the "no degree" percent from 100%) are lower than those of Table 25 because Table 26 reflects a time period when recruit high school graduates are relatively low. In July-August, for example, the number of recruit high school graduates increases sharply.

TABLE 25

Percent of High School Graduates
Among Enlisted Accessions
FY 1962 - 76

Year	Percent
1962	60.7
1963	63.2
1964	58.3
1965	56.0
1966	76.8
1967	89.2
1968	86.8
1969	82.4
1970	82.0
1971	82.7
1972	81.5
1973	69.9
1974	72.2
1975	74.9
1976	84.7

Note: Percents are for accessions for the entire fiscal year, and include personnel with at least a high school education (i.e., H.S. diploma, H.S. GED, H.S. + some college, and college degree)

TABLE 26

Percent of Recruits (Pay Grade E1) in each Education Category
Seamen, Firemen, Constructionmen, Airmen
1972 to 1976

Year	Education Category				
	No Degree	H.S. Dipl.	H.S. GED	H.S. Dipl. + C.	College
<u>Seamen</u>					
1972	39.1	52.8	5.4	2.5	0.1
1973	33.6	56.8	6.9	2.5	0.2
1974	35.5	55.9	5.2	3.0	0.4
1975	25.0	63.8	6.6	3.9	0.7
1976	26.3	62.7	8.4	2.5	0.2
<u>Firemen</u>					
1972	47.3	43.4	7.6	1.6	*
1973	53.3	40.0	5.4	1.3	*
1974	59.7	34.0	5.6	0.6	0.1
1975	47.6	45.2	6.4	0.7	0.1
1976	38.3	50.6	10.3	0.7	*
<u>Const.</u>					
1972	37.3	58.9	2.4	1.5	--
1973	35.6	55.5	5.7	2.2	1.1
1974	30.2	58.0	9.2	2.6	--
1975	36.4	56.2	5.0	2.5	--
1976	27.7	68.2	3.7	0.3	--
<u>Airmen</u>					
1972	41.0	50.5	5.8	2.5	0.2
1973	45.9	45.1	6.9	2.0	0.1
1974	51.9	41.3	5.8	1.0	*
1975	37.9	52.8	7.4	1.9	*
1976	27.9	59.8	10.5	1.8	*
<u>Total^a</u>					
1972	40.3	51.5	5.7	2.4	*
1973	38.7	52.3	6.6	2.2	0.2
1974	42.0	50.0	5.4	2.3	0.3
1975	29.0	60.5	6.6	3.3	0.6
1976	28.3	60.5	9.0	2.1	0.1

*Less than 0.1%

^aTotal = SN, FN, CN, AN

Navy today.

The analysis of trend data on GCT, ARI, and MECH performance among recruits for the 1962-75 period produces some interesting findings. Data in Table 27 show that, except for increases in GCT and ARI during the Vietnam War years (approximately 1966-72), average scores for recruits on GCT, ARI and MECH have remained about the same between FYs 1962-75. These figures show that average aptitude scores for recruits have remained relatively the same for the pre- and post-Vietnam years, despite the previously described increases in civilian schooling for recruits. A comparison of the figures in Tables 25 and 27 shows that, while the percent of high school graduates among recruits rose significantly from 1962 to 1976 (60.7% v. 84.7%), there was not a corresponding rise in BTB aptitude scores. It would have been expected that levels of aptitude and years-of-education would yield a more positive correlation than that suggested by Tables 25 and 27.

Figure 2 lends further emphasis to this point in comparing recruit trends in percent of high school graduates who scored 20, 30, 40, 50, 60, and 70 on the GCT subtest. GCT has been considered a fairly reliable index of a recruit's general knowledge, and presumably level-of-education should have some bearing on the magnitude of a GCT score. It can be seen that this is precisely the case for any one year - i.e., the higher the GCT score, the higher the percent of those who achieved this score who were high school graduates. Figure 2 also shows that, almost without exception, the percent of those achieving a given GCT score, who were high school graduates, rose in each year from 1966 to 1973. If the

TABLE 27

Basic Test Battery
Average Scores Among
Enlisted Accessions
FY 1962 - 75

Fiscal Year	Count	GCT	ARI	Mech
1962	92,324	52.3	51.7	51.0
1963	75,521	52.4	52.6	51.2
1964	87,487	51.9	52.2	50.8
1965	88,650	51.4	52.1	50.0
1966	142,532	54.2	54.1	51.6
1967	94,871	57.0	55.1	52.1
1968	108,252	55.0	54.2	51.5
1969	124,656	53.8	53.2	50.5
1970	117,110	54.6	53.6	50.8
1971	80,494	55.6	53.9	51.0
1972	79,306	54.2	51.9	52.7
1973	102,494	52.7	50.4	52.2
1974	84,763	51.7	49.1	49.5
1975	100,600	52.9	50.6	50.7

Note: Scores represent an average for the entire Fiscal Year. Comparable figures for FY 76 cannot be given because of insufficient reporting of numbers tested during the last six months (Jan.-June) when the ASVAB battery first came into use.

TABLE 28

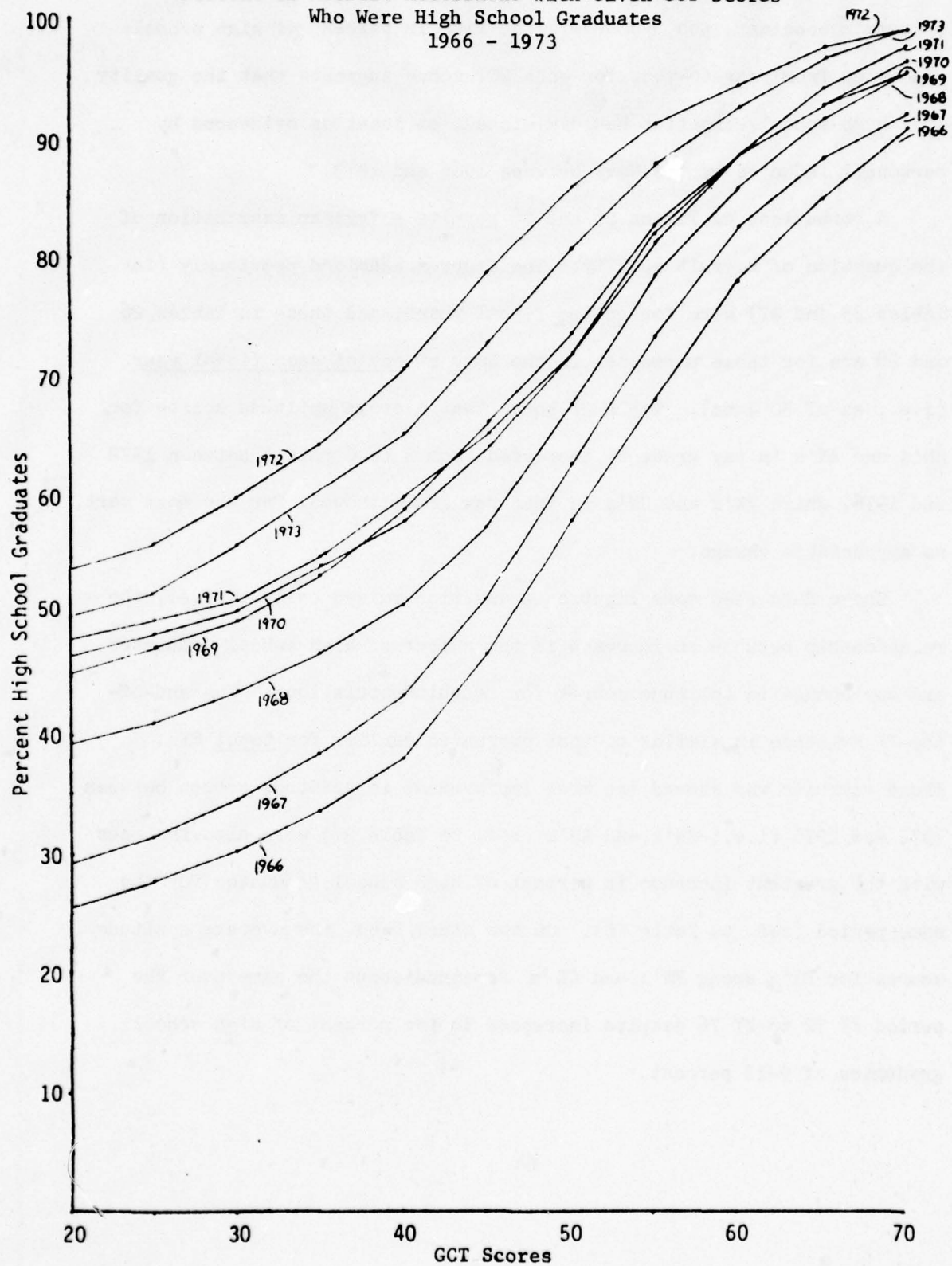
Recruits: Pay Grade E1
Average GCT/WK, ARI/AR, MECH/MC Scores for Seamen, Firemen, Constructionmen, and Airmen
1972 to 1976

Apprenticeship	GCT/WK					ARI/AR					MECH/MC				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Seamen	50	51	49	53	53	47	48	47	50	52	46	47	49	49	51
Firemen	50	48	45	48	50	50	46	45	46	50	51	49	50	50	52
Constructionmen	52	52	50	53	52	52	49	49	49	51	--	51	52	53	53
Airmen	49	49	46	51	51	47	47	46	49	50	45	48	49	50	51
TOTAL	50	50	48	52	52	47	48	47	49	51	46	48	49	49	51

Note: 1976 gives the average score for GCT for the first six months and for WK for the second six months. The same distinction is made for ARI v. AR and MECH v. MC in 1976. The scores for 1972-75 are for GCT, ARI, and MECH only.

FIGURE 2

Relationship Between GCT Scores and Education Levels
Percent of Recruit Accessions with Given GCT Scores
Who Were High School Graduates
1966 - 1973



quality of high school education remained constant over this period, one would expect the percent of high school graduates for each GCT category to remain constant, too. However, the rise in percent of high school graduates from year-to-year for each GCT score suggests that the quality of a high school education has diminished, at least as evidenced by personnel inducted by the Navy between 1966 and 1973.

A comparison of Tables 26 and 28 permits a further examination of the question of recruit quality. The figures examined previously (in Tables 25 and 27) were for entire fiscal years, and those in Tables 26 and 28 are for those personnel in the Navy at end of each fiscal year (i.e., as of 30 June). Table 28 shows that average aptitude scores for SN's and AN's in pay grade E1 increased from 2 to 6 points between 1972 and 1976, while FN's and CN's in that pay grade showed, for the most part, no appreciable change.

These data shed some light on a question raised earlier; i.e., the relationship between an increase in the number of high school graduates and any change in aptitude scores for recruit populations. The end-of-the-FY evidence is similar to that presented earlier for total FYs. Those recruits who showed the most improvement in aptitude scores between 1972 and 1976 (i.e., SN's and AN's: ref. to Table 28) were also the ones with the greatest increase in percent of high school graduates for the same period (ref. to Table 26). On the other hand, the average aptitude scores for E1's among FN's and CN's remained about the same over the period FY 72 to FY 76 despite increases in the percent of high school graduates of 9-10 percent.

Again, although it appears obvious that educational level correlates positively with aptitude level, there is sufficient evidence to suggest that possession of a high school diploma is not a consistently reliable indicator of potential. This point is amplified further in the section on reading ability.

Reading Ability (Figures 3 and 4)

A measure of reading ability has not been part of the standard battery of tests given to Navy personnel, and therefore reading scores were not among the data on enlisted men furnished by the Chief of Naval Personnel. However, it is possible to gain some insight into the reading ability of Navy enlisted personnel from the research of a number of investigators.

Carver (October, 1973) employed an unpublished reading comprehension test to examine the reading ability of a sample of recruits. His findings showed that what he calls the "average recruit" read at the 9.5 level.

Duffy, Nugent, Millar, and Carter (1974) tested the reading of recruits reporting to the Recruit Training Command, San Diego between May and August, 1974. After employing the Gates-MacGinitie reading test, they found the median reading grade level (RGL) to be 10.5. Fifty percent of the recruits, therefore, were reading below the 10.5 grade level, and 25% tested below the 8.7 grade level.

Having extended the study to a May 1974-May 1975 time frame, Duffy (1975) was able to report results of reading tests administered to 31,540 male recruits over an entire year's period. The mean RGL of 9.8 analyzed over the entire population was consistent with Carver's 9.5. However,

because scores were skewed toward the high end of the range, the median score of 10.7 was considered to be more representative of the general reading ability of the recruit population tested. Again, the 10.7 median score was consistent with the 10.5 median score for the sample of the first few months of study.

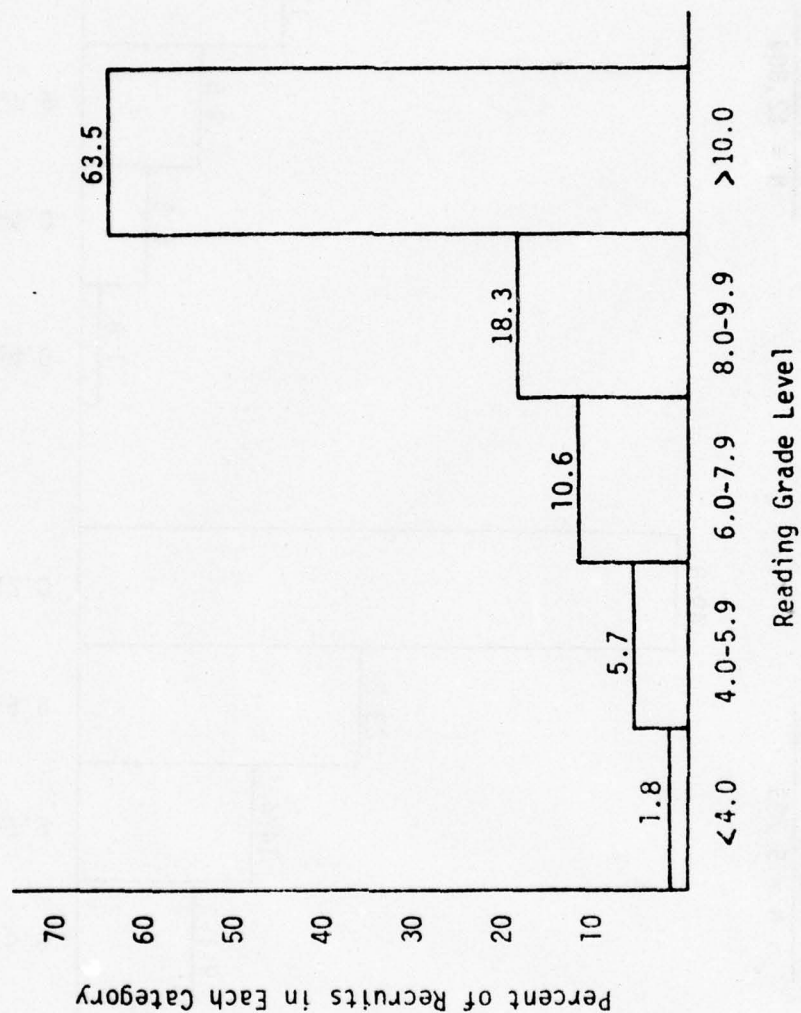
While 63.5% of the year-long Duffy investigation read at the 10.0 grade level or better, 18.1% performed below the 8.0 grade level. In other words, more than one recruit out of three read below the 10th grade level. See Figure 3 for Duffy's reading grade level distributions.

An interesting finding from a segment of the Duffy study, which is related to the question examined earlier regarding a relationship between education and aptitude, was that education did not necessarily correlate closely to reading skills. The median reading levels for high school graduates and high school non-graduates who entered recruit training at San Diego between May and October, 1974 was 10.9 and 10.2 respectively. In fact, only a 0.13 correlation was found between reading ability and years-of-education among a subsample of 19,000 recruits in the study. See Figure 4 for Duffy's distribution of reading levels for high school graduates and non-graduates.

Because of the absence of reading ability scores for all enlisted personnel in the Navy, reading ability is not treated any further in the main sections of this report. However, Appendix G, entitled "The Question of Reading Ability Among Navy Personnel" contains a brief, exploratory treatment of the matter of reading ability among today's youth and its implications for the Navy.

FIGURE 3

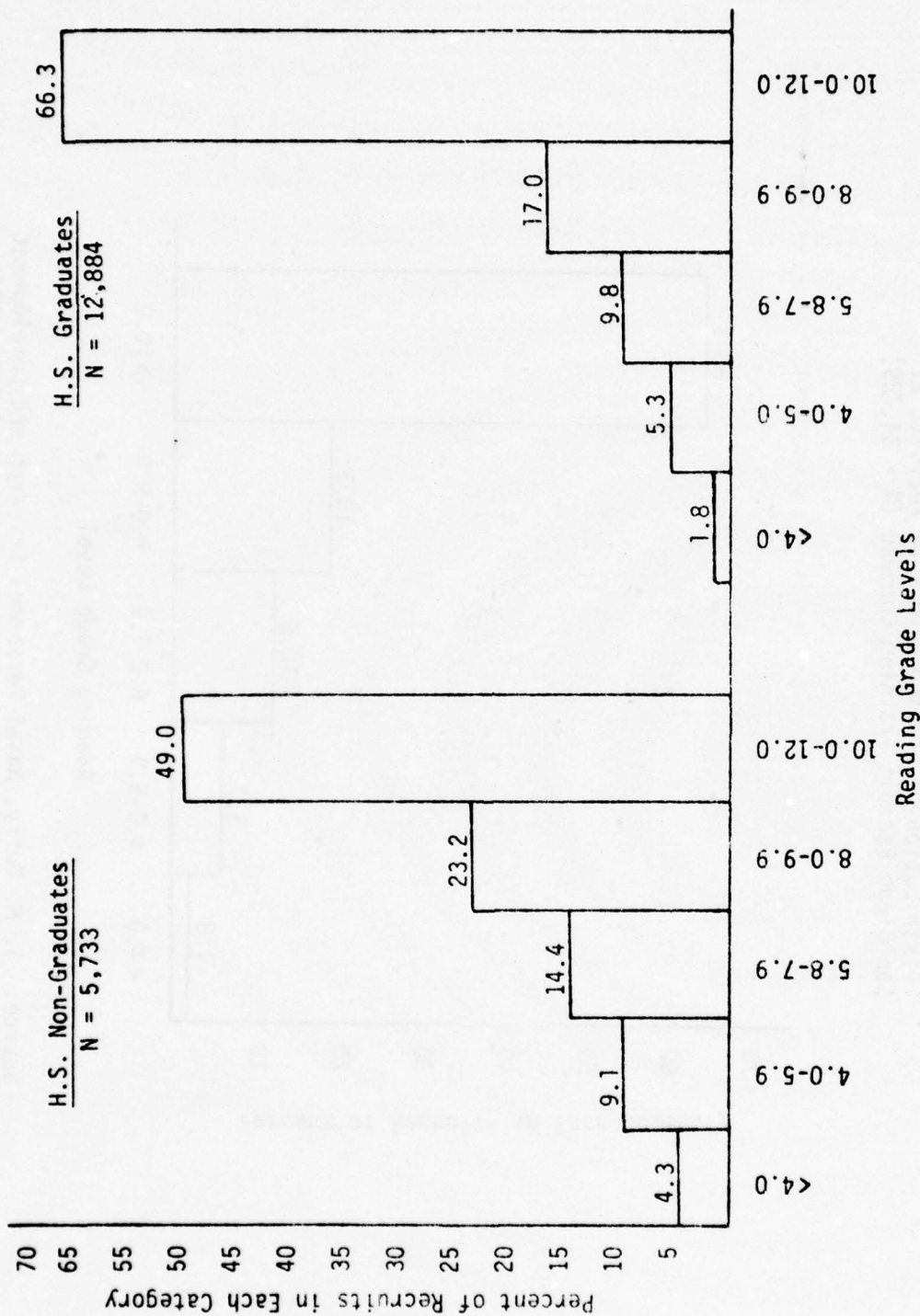
Reading Grade Level
Distribution of Reading Levels of Recruits at
San Diego Recruit Training Command (N = 24,729)



Source: T. M. Duffy, Naval Personnel Research and Development Center, Literacy Research in the Navy, October 1975.

FIGURE 4

Reading Levels for High School Graduates and Non-Graduates at RTC



Source: T. M. Duffy, Naval Personnel Research and Development Center, Literacy Research in the Navy, October 1975.

C. Occupation Groups and Ratings

The primary reason for conducting the research presented in this report was to obtain better information about the characteristics of personnel by occupational specialties. While available detailed data on total enlisted personnel were considered to be helpful, they were of no value in differentiating among groups of personnel according to the jobs they perform. For example, ET's might have a significantly different profile than BT's. Therefore, information pertaining to demography, education, aptitude, and enlistments by Navy occupation groups and ratings was obtained, the findings of which are presented in the sections which follow.

Age Distribution (Tables 29 to 31)

In comparing 1972 with 1976 with respect to age, the most notable change is the increase, both in number and percent of total, of personnel 20 years of age and under, and the corresponding decrease in personnel 21-24 years of age. This finding was cited previously in connection with total enlisted personnel, and it also pertains to every occupation group (except for slight 21-24 year old gains for the Dental group). Almost without exception, wide differences in counts between the "20 and less" and "21-24" categories for each occupation group in FY 72 had been sharply reduced by the end of FY 76. Table 29 shows that the overall 106,000 count margin held by 21-24 year olds over personnel 20 and under in 1972 had dropped to just a little over 9,000 by 1976.

Table 30 indicates that percent change in actual counts for the two

TABLE 29

Occupation Groups by Two Age Categories
Counts and Percent^a of Occupation Groups
1972 v. 1976

Occupation Group	Total				Ages: 20 & Less				Ages: 21-24			
	1972		1976		1972		1976		1972		1976	
	#	%	#	%	#	%	#	%	#	%	#	%
I Deck	37,149	100	31,726	100	2,863	7	5,193	16	16,198	43	9,824	30
II Ordnance	25,075	100	21,513	100	2,381	9	4,934	22	11,095	44	6,300	29
III Electronics	23,179	100	18,997	100	1,514	6	3,224	16	11,524	49	6,783	35
IV Prec. Equip.	818	100	782	100	101	12	114	14	398	48	249	31
V Adm./Cler.	88,697	100	84,233	100	6,926	7	12,406	14	35,346	39	22,889	27
VI Misc.	71,592	100	69,260	100	41,868	58	45,448	65	27,002	37	17,965	25
VII Eng./Hull	97,458	100	93,463	100	21,466	22	29,186	31	41,723	42	32,190	34
VIII Constr.	12,232	100	11,763	100	1,872	15	2,669	22	4,627	37	3,742	31
IX Aviation	114,141	100	101,028	100	20,965	18	25,366	25	48,100	42	31,571	31
X Medical	24,905	100	23,510	100	3,565	14	4,150	17	12,184	48	9,318	39
XI Dental	3,257	100	3,432	100	459	14	495	14	1,561	47	1,613	46
TOTAL	498,503*	100	459,707	100	103,980	21	133,185	29	209,758	42	142,444	31

*Total excludes 12,166 Stewardsmen. There were no Stewardsmen after 1973.

^bPercentage fractions were rounded down by the computer; therefore each percent under 100% above could be as much as .9 of a percent higher than shown.

^bGroups VI, VII, VIII, and IX "20 & Less" category will be disproportionately higher in percentage than others because these former occupation groups include apprenticeships (SN, FN, CN, and AN respectively)

TABLE 30

Occupation Groups by Two Age Categories
Percent Change in Counts
1972 v. 1976

Occupation Groups	Total			20 and Less			21 - 24		
	1972	1976	% Change	1972	1976	% Change	1972	1976	% Change
Deck	37,149	31,726	-15	2,863	5,193	+81	16,198	9,824	-39
Ordnance	25,075	21,513	-14	2,381	4,934	+107	11,095	6,300	-43
Electronics	23,179	18,997	-18	1,514	3,224	+113	11,224	6,783	-41
Prec. Equip.	818	782	-4	101	114	+13	398	249	-37
Adm./Cler.	88,697	84,233	-5	6,926	12,406	+79	35,346	22,889	-35
Misc.	71,592	69,260	-3	41,868	45,448	+9	27,002	17,965	-33
Eng./Hull	97,458	93,463	-4	21,466	29,186	+36	41,723	32,190	-23
Constr.	12,232	11,763	-4	1,872	2,669	+43	4,627	3,742	-19
Aviation	114,141	101,028	-11	20,965	25,366	+21	48,100	31,571	-34
Medical	24,905	23,510	-6	3,565	4,150	+16	12,184	9,318	-24
Dental	3,257	3,432	+5	459	495	+8	1,561	1,613	+3
TOTAL	498,503*	459,707	-8	103,980	133,185	+28	209,758	142,444	-68

* Total excludes 12,166 Stewardsmen. There were no Stewardsmen after 1973.

age categories by occupation groups between 1972 and 1976 often has been substantial. The occupation groups with the greatest number of technical ratings (Deck, Ordnance, Electronics, Engineering and Hull, and Aviation) gained from 1,700 (Electronics) to almost 8,000 (Engineering and Hull) of the younger group, while losing from about 5,000 (Ordnance, Electronics) to about 17,000 (Aviation) of the 21-24 year-olds. Overall, those 20 years old or less increased between 1972-76 by 28% (103,980 v. 133,185) while those 21-24 years old decreased for the same period by 68% (209,758 v. 142,444).

Table 31 reports changes in counts and percent for the two youngest (20 and less, 21-24) age categories. Seventy-five of 101 ratings¹ increased in the number of personnel who are 20 years old or younger between 1972 and 1976, while 75 ratings also decreased in the number of personnel who are 21-24 years of age. Usually these percentage increases/decreases were accompanied by gains/losses in actual number of enlisted men. Five Engineering and Hull ratings (MM, EN, BT, EM, HT) gained (72 v. 76) 1,000 or more personnel 20 years of age and younger. On the other hand, a variety of ratings as follows lost 1,000 or more 21-24 year-olds between 1972 and 1976: BM, SM, GMG, FTG, ETN, ETR, RM, CTR, YN, SK, EN, HT, ADR, ADJ, AT, AO, AQ, AE, and HM.

Sex Distribution (Tables 32 and 33)

At the end of FY 76, 19,284 enlisted women were on active duty in the Navy. Of these, 93% (17,874) were confined to four occupation groups: Administrative and Clerical (35%); Miscellaneous (22%); Aviation (19%);

¹Does not include the apprenticeship groups (SN, FN, CN, AN)

TABLE 31

Ratings by Two Age Categories
Counts, Gain/Loss, and Percent Change
1972 v. 1976

Occupation Group/Rating	Ages: 20 and Less			Ages: 21-24		
	Counts 1972	Counts 1976	Gain/Loss 72 v. 76 %	Counts 1972	Counts 1976	Gain/Loss 72 v. 76 %
BM	133	244	+111	3,937	1,860	-2,077
MA	--	--	--	--	1	1
QM	608	737	+129	2,188	1,379	-809
SM	439	631	+192	1,761	739	-1,022
OS	--	1,908	+1,908	--	2,599	+2,599
EW	97	245	+148	225	601	+376
ST	--	--	--	105	--	-105
STG	445	774	+329	2,158	1,292	-866
STS	132	421	+289	728	874	+146
OT	125	233	+108	479	479	--
Deck	1,979*	5,193	+3,214*	11,581*	9,824	-1,757*
TM	879	926	+47	1,918	1,099	-819
GM	--	--	--	--	--	--
GMM	83	346	+263	650	291	-359
GMT	111	328	+217	542	353	-189
GMG	349	839	+490	2,211	992	-1,219
FT	--	--	--	--	--	--
FTG	488	1,106	+618	2,770	1,475	-1,295
FTM	170	719	+549	1,387	1,112	-275
FTB	87	185	+98	556	284	-272
MT	107	367	+260	753	511	-242
MN	107	118	+11	308	183	-125
Ordnance	2,381	4,934	+2,553	11,095	6,300	-4,795

TABLE 31 (cont'd)

Ratings by Two Age Categories
Counts, Gain/Loss, and Percent Change
1972 v. 1976

Occupation Group/Rating	Ages: 20 and Less				Ages: 21-24			
	Counts		Gain/Loss 72 v. 76	% Change	Counts		Gain/Loss 72 v. 76	% Change
	1972	1976			1972	1976		
ET	--	--	--	--	227	49	-178	-78
ETN	684	1,522	+838	+123	5,470	3,309	-2,161	-40
ETR	786	1,446	+660	+84	5,209	2,659	-2,550	-49
DS	44	256	+212	+482	618	766	+148	+24
Electronics	1,514	3,224	+1,710	+113	11,524	6,783	-4,741	-41
PI	--	--	--	--	--	--	--	--
IM	63	55	-8	-13	232	126	-106	-46
OM	38	59	+21	+55	166	123	-43	-26
Prec. Equip.	101	114	+13	+13	398	249	-149	-37
NC	--	--	--	--	--	--	--	--
RM	2,682	3,280	+598	+22	9,631	5,094	-4,537	-47
CTT	157	409	+252	+161	1,099	456	-643	-59
CTA	64	191	+127	+198	604	308	-296	-49
CTM	39	298	+259	+664	803	490	-313	-39
CTO	172	457	+285	+166	1,276	640	-636	-50
CTR	177	475	+298	+168	1,845	449	-1,396	-76
CTI	18	70	+52	+289	491	209	-282	-57
YN	687	897	+210	+31	4,497	3,068	-1,429	-32
LN	--	--	--	--	--	38	+38	*
PN	718	697	-21	-3	2,583	2,394	-189	-7

TABLE 31 (cont'd)

Ratings by Two Age Categories
Counts, Gain/Loss, and Percent Change
1972 v. 1976

Occupation Group/Rating	Ages: 20 and Less				Ages: 21-24			
	Counts		Gain/Loss	%	Counts		Gain/Loss	%
	1972	1976	72 v. 76	Change	1972	1976	72 v. 76	Change
DP	311	385	+74	+24	1,350	1,059	-291	-22
SK	631	1,147	+516	+82	3,550	2,549	-1,001	-28
DK	50	217	+167	+334	576	667	+91	+16
MS	--	2,716	+2,716	*	--	3,046	+3,046	*
CS	818	--	-818	-100	3,356	--	-3,356	-100
SD	--	--	--	--	--	--	--	--
SH	205	829	+624	+304	1,585	1,433	-152	-9
JO	36	71	+35	+97	195	276	+81	+42
PC	59	144	+85	+144	625	406	-219	-35
IS	--	123	+123	*	--	307	+307	*
Adm./Cler.	6,926	12,406	+5,480	+79	35,346	22,889	-12,457	-35
LI	21	25	+4	+19	215	134	-81	-38
DM	21	5	-16	-76	153	73	-80	-52
MU	152	48	-104	-68	397	191	-206	-52
SN	41,674	45,370	+3,696	+9	26,237	17,567	-8,670	-33
Miscellaneous	41,868	45,448	+3,580	+9	27,002	17,965	-9,037	-33
NM	2,602	5,096	+2,494	+96	9,188	9,369	+181	+2
EN	788	1,949	+1,161	+147	3,640	2,558	-1,082	-30
MR	301	475	+174	+58	1,215	834	-381	-31
BT	1,468	3,239	+1,771	+121	4,231	3,644	-587	-14

TABLE 31 (cont'd)

Ratings by Two Age Categories
Counts, Gain/Loss, and Percent Change
1972 v. 1976

Occupation Group/Rating	Ages: 20 and Less				Ages: 21-24			
	Counts		Gain/Loss 72 v. 76	% Change	Counts		Gain/Loss 72 v. 76	% Change
	1972	1976			1972	1976		
BR	--	--	--	--	1	1	--	--
EM	1,084	2,327	+1,243	+115	5,622	4,738	-884	-16
IC	544	1,086	+542	+100	2,532	2,123	-409	-16
HT	1,451	2,682	+1,231	+85	5,198	3,682	-1,516	-29
PM	20	34	+14	+7	75	66	-9	-12
ML	39	60	+21	+54	86	74	-12	-14
FN	13,169	12,238	-931	-7	9,935	5,101	-4,834	-49
Eng./Hull	21,466	29,186	+7,720	+36	41,723	32,190	-9,533	-23
CU	--	--	--	--	--	--	--	--
EA	8	46	+38	+475	164	145	-19	-12
CE	183	239	+56	+31	584	521	-63	-11
EQ	--	--	--	--	--	--	--	--
EO	231	646	+415	+180	1,121	811	-310	-28
CM	145	295	+150	+103	645	425	-220	-34
BU	335	523	+188	+56	979	956	-23	-2
SW	136	141	+5	+4	296	257	-39	-13
UT	146	293	+147	+101	410	529	+119	+29
CN	688	486	-202	-29	428	98	-330	-77
Construction	1,872	2,669	+797	+43	4,627	3,742	-885	-19

TABLE 31 (cont'd)

Ratings by Two Age Categories
Counts, Gain/Loss, and Percent Change
1972 v. 1976

Occupation Group/Rating	Ages: 20 and Less			Ages: 21-24		
	Counts 1972	Counts 1976	Gain/Loss 72 v. 76 %	Counts 1972	Counts 1976	Gain/Loss 72 v. 76 %
AF	--	--	--	--	--	--
AV	--	--	--	--	--	--
AD	--	--	--	--	--	--
ADR	454	172	-282	1,779	302	-1,477
ADJ	1,593	1,983	+390	4,537	3,441	-1,096
AT	723	1,321	+598	5,881	3,209	-2,672
AX	133	432	+299	490	715	+225
AW	107	549	+442	1,041	971	-70
AO	530	1,271	+741	2,980	1,661	-1,319
AQ	370	376	+6	2,262	1,178	-1,084
AC	246	313	+67	1,083	854	-229
AB	--	--	--	--	--	--
ABE	225	343	+118	661	536	-125
ABF	124	352	+228	494	492	-2
ABH	171	506	+335	1,064	902	-162
AE	599	1,409	+810	4,504	2,595	-1,909
AM	--	--	--	--	--	--
AMS	953	1,240	+287	2,989	2,081	-908
AMH	797	1,237	+440	2,662	1,891	-771
AME	314	632	+318	1,078	822	-256
PR	181	341	+160	849	590	-259
AG	124	226	+102	615	566	-49
TD	90	293	+203	797	432	-365
AK	292	261	-31	1,174	1,054	-120

TABLE 31 (cont'd)

Ratings by Two Age Categories
Counts, Gain/Loss, and Percent Change
1972 v. 1976

Occupation Group/Rating	Ages: 20 and Less				Ages: 21-24			
	Counts		Gain/Loss 72 v. 76	% Change	Counts		Gain/Loss 72 v. 76	% Change
	1972	1976			1972	1976		
AZ	433	312	-121	-28	1,391	956	-435	-31
AS	--	--	--	--	1	1	--	--
ASE	66	68	+2	+3	336	165	-171	-51
ASH	47	89	+42	+89	300	154	-146	-49
ASM	79	68	-11	-14	411	249	-162	-39
PH	176	150	-26	-15	757	684	-73	-10
PT	36	--	-36	-100	229	--	-229	-100
AN	12,102	11,422	-680	-6	7,735	5,070	-2,665	-34
Aviation	20,965	25,366	+4,401	+21	48,100	31,571	-16,529	-34
	3,565	4,150	+585	+16	12,184	9,318	-2,866	-24
DT	459	495	+36	+8	1,561	1,613	+52	+3

*RD's (Radarmen) are from 1972 group totals. RD's were replaced by OS's (Operations Specialists) in 1973.

Note: A dash (--) means "no counts" or "no percent."

and Medical (17%). The remaining 7% were spread among all the other occupation groups (except none in Precision Equipment). While the concentration of women in four occupation groups in 1976 represented no real change over 1972 females first appearing in some occupation groups (Ordnance, Engineering and Hull, Construction) and their growth in numbers in others (Deck, Electronics, Dental) were new developments.

Concurrent with the appearance of women for the first time in certain occupation groups during the 1972-76 period were their great increases in most other occupation groups. Substantial growth in numbers of women occurred in the following occupation groups: Deck (10 to 371); Electronics (47 to 252); Adm./Clerical (1,654 to 6,678); Miscellaneous (1,652 to 4,217); Aviation (858 to 3,628); and Medical (1,257 to 3,351).

Although total number of female counts rose from 5,723 in 1972 to 19,284 in 1976. total number of males dropped from 492,780 to 440,423 for the same two years. The number of males expressed as a percent of totals in an occupation group declined for every group between 1972 and 1976, and most notably in the Adm./Clerical, Miscellaneous, Aviation, Medical, and Dental groups. While female gains (72 v. 76) helped to offset large male losses for some occupation groups, other occupation groups (principally Deck, Ordnance, Electronics, Engineering and Hull) suffered enormous male losses which in no way were offset by these relatively small female increases. Table 33 presents a detailed picture of number of females (72 v. 76) by ratings.

Race Distribution (Tables 34 and 35)

From 1972 to 1976, Blacks and "Other" non-Whites increased in

TABLE 32

Male and Female Distribution by Occupation Groups
Counts and Percents
1972 v. 1976

Occupation Group	Total		Male		Female	
	1972	1976	1972	1976	1972	1976
I Deck	37,149	31,726	37,139	31,355	10	371
II Ordnance	25,075	21,513	25,075	21,493	100	20
III Electronics	23,179	18,997	23,132	18,745	47	252
IV Prec.Equip.	818	782	818	782		1
V Adm./Cler.	88,697	84,233	87,043	77,555	1,654	6,678
VI Misc.	71,592	69,260	69,940	65,043	1,652	4,217
VII Eng./Hull	97,458	93,463	97,458	93,273		190
VIII Constr.	12,232	11,763	12,232	11,749		14
IX Aviation	114,141	101,028	113,283	97,400	858	3,628
X Medical	24,905	23,510	23,648	20,159	1,257	3,351
XI Dental	3,257	3,432	3,012	2,869	245	563
TOTAL	498,503*	459,707	492,780	440,423	5,723	19,284
			99	96	1	4

* Total excludes 12,166 Stewardsmen. There were no Stewardsmen after 1973.

**Less than 1%

TABLE 33

Female Counts by Ratings
1972 v. 1976

Rating	1972	1976	Rating	1972	1976	Rating	1972	1976
<u>Deck</u>			<u>Adm./Cler. (cont'd)</u>			<u>Const. (cont'd)</u>		
BM	--	26	CTM	--	48	EQ	--	--
MA	*	6	CTO	1	197	EO	--	7
QM	--	49	CTR	--	191	CM	--	1
SM	--	23	CTI	--	54	BU	--	3
OS	*	129	YN	558	1,779	SW	--	--
EW	--	--	LN	*	43	UT	--	1
ST	--	--	PN	320	860	<u>Aviation</u>		
STG	--	--	DP	171	364	AF	--	--
STS	--	--	SK	157	564	AV	1	1
OT	10	143	DK	89	150	AD	--	--
<u>Ordnance</u>			MS	*	246	ADR	--	44
TM	--	14	CS	--	*	ADJ	--	105
GM	--	--	SD	--	*	AT	2	272
GMM	--	--	SH	--	121	AX	--	41
GMT	--	1	JO	67	100	AW	--	--
GMG	--	3	PC	--	46	AO	--	14
FT	--	--	IS	*	54	AQ	3	48
FTG	--	1	<u>Misc.</u>			AC	80	296
FTM	--	--	LI	--	9	AB	--	--
FTB	--	--	DM	7	26	ABE	--	1
MT	--	--	MU	1	39	ABF	--	7
MN	--	1	<u>Eng./Hull</u>			ABH	--	16
<u>Electronics</u>			MM	--	12	AE	--	90
ET	7	4	EN	--	30	AM	--	--
ETN	37	92	MR	--	2	AMS	--	27
ETR	2	95	BT	--	3	AMH	--	25
DS	1	61	BR	--	--	AME	--	6
<u>Precision</u>			EM	--	24	PR	--	51
PI	--	--	IC	--	27	AG	42	214
IM	--	--	HT	--	13	TD	80	146
OM	--	--	PM	--	--	AK	115	283
<u>Adm./Cler.</u>			ML	--	--	AZ	170	291
NC	--	8	<u>Const.</u>			AS	--	--
RM	227	1,486	CU	--	--	ASE	--	3
CTT	--	210	EA	--	2	ASH	--	4
CTA	1	157	CE	--	--	ASM	--	11
						PH	164	174
						HM**	1,257	3,351
						DT**	245	563

* Did not exist in 1972 or 1976

** Also represents Medical & Dental Group Counts

Note: A dash (--) means "no counts"

number and percent of total in virtually every occupation group. By contrast, Whites dropped in number and percent of total in each occupation group. See Table 34.

Non-White personnel experienced increases in their share of total personnel in occupation groups between 1972 and 1976 as follows:

<u>Occupation Group</u>	<u>Increase</u>
Adm./Clerical	13%
Medical	8%
Dental	5%
Aviation	3%
Engineering/Hull	3%
Miscellaneous	3%
Deck	3%
Precision Equipment	3%
Ordnance	2%
Construction	2%
Electronics	1%

Table 35 shows where increases and decreases occurred by race between 1972-76. White decreases in excess of 500 personnel occurred in the following occupation groups and ratings: Deck (BM, QM, SM, ST); Ordnance (TM, GMG, FTG); Electronics (ET, ETN, ETR); Adm./Clerical (RM, CT Group, YN, PN, SK); Eng./Hull (EN, EM, HT); Aviation (ADR, AT, AO, AQ, AE, AMS, AMH, AZ); and Medical (HM).

By comparison, non-White increases which exceeded 100 personnel occurred in the following occupation groups and ratings: Adm./Clerical (RM, YN, PN, DP, SK, DK, MS, SH, PC); Eng./Hull (MM, MR, BT, EM, IC, HT); Aviation (ADJ, AT, AO, ABF, ABH, AE, AMS, AMH, AK, AZ); Medical (HM); and Dental (DT).

Educational Level (Tables 36-40; Figure 5)

The findings pertaining to educational level contain some

TABLE 34

Race Distribution by Occupation Groups
Counts and Percents
1972 v. 1976

Occupation Group	Total ^a			White			Black			Other		
	1972 #	%	1976 #	1972 #	%	1976 #	1972 #	%	1976 #	1972 #	%	1976 #
Deck	37,149	100	31,724	34,596	93	28,750	2,202	6	2,480	351	1	494
Ordnance	25,075	100	21,513	23,988	96	20,246	921	4	1,076	166		191
Electronics	23,179	100	18,996	22,558	97	18,303	435	2	515	186	1	178
Prec. Equip.	818	100	782	793	97	736	20	2	34	5	1	12
Adm./Cler.	88,697	100	84,233	78,288	88	63,273	5,212	6	7,923	5,197	6	13,037
Misc.	71,592	100	69,253	61,204	85	56,849	8,993	13	9,892	1,395	2	2,512
Eng./Hull	97,458	100	93,460	89,971	92	83,486	4,665	5	5,228	2,822	3	4,746
Const.	12,232	100	11,762	11,474	94	10,854	393	3	396	365	3	512
Aviation	114,141	100	101,024	104,796	92	90,046	7,323	6	7,532	2,022	2	3,446
Medical	24,905	100	23,509	22,952	92	20,488	1,398	6	1,869	555	2	1,152
Dental	3,257	100	3,432	2,858	88	2,778	228	7	401	171	5	253
TOTAL	498,503*	100	459,688	453,478	91	395,809	31,790	6	37,346	13,235	3	26,533
												6

* Total excludes 12,166 Stewardsmen. There were no Stewardsmen after 1973.

^a Total numbers and some Occupation Group numbers are just slightly below the actual counts for 1976 because of a few "unknowns."

TABLE 35

Race Distribution by Ratings
Numbers and Gains/Losses
1972 v. 1976

Rating	White		72 v. 76		Black		72 v. 76		Other		72 v. 76	
	1972	1976	Gain +	Loss -	1972	1976	Gain +	Loss -	1972	1976	Gain +	Loss -
Deck												
BM	9,608	6,635		2,973	1,180	1,190	10		185	234	49	
MA	*	498			*	51			*	29		
QM	4,802	3,826		976	197	234	37		50	52	2	
SM	3,811	2,329		1,482	370	318		52	50	50		
OS	*	6,744			*	422			*	58		
EW	826	1,661	835		24	58	34		3	22	19	
ST	2,143	55		2,088	50			50	13			13
STG	3,105	3,533	428		52	116	64		16	25	9	
STS	1,021	2,155	1,134		23	63	40		2	15	13	
OT	991	1,314	323		14	28	14		2	9	7	
Ordnance												
TM	4,872	3,812		1,060	185	202	17		17	21	4	
GM	213	155		58	8	14	6					
GMM	1,213	1,051		162	41	43	2		6	9	3	
GMT	1,481	1,439		42	41	59	18		7	11	4	
GMG	4,928	3,495		1,433	410	387		23	61	52		9
FT	452	458	6		4	11	7		2			2
FTG	4,779	4,009		770	97	150	53		35	35	15	
FTM	3,028	2,859		169	72	136	64	2	20	35	5	
FTB	990	899		91	23	21			8	13	5	
MT	1,353	1,514	161		25	34	9		7	12	5	
MN	649	555		94	15	19	4		3	3		

TABLE 35 (cont'd)

Race Distribution by Ratings
Numbers and Gains/Losses
1972 v. 1976

Rating	White		72 v. 76		Black		72 v. 76		Other		72 v. 76	
	1972	1976	Gain +	Loss -	1972	1976	Gain +	Loss -	1972	1976	Gain +	Loss -
Electronics												
ET	5,520	4,639		881	90	92	2		42	29		13
ETN	7,937	6,463		1,474	187	198	11		72	54		18
ETR	7,507	5,407		2,100	133	177	44		60	55		5
DS	1,594	1,794	200		25	48	23		12	40	28	
Prec. Equip.												
PI	8	12	4			3	3					
IM	429	387		42	14	19	5		3	10	7	
OM	356	337		19	6	12	6		2	2		
Adm./Cler.												
NC	*	647	647		*	44	44		*	23	23	
RM	20,244	14,636		5,608	954	1,787	833		186	183		3
CTT	2,421	1,768		653	42	77	35		5	14	9	
CTA	1,229	920		309	15	60	45		4	3		1
CTM	2,057	1,611		446	9	30	21		6	5		1
CTO	2,349	1,809		540	30	86	56		9	9		
CTR	3,659	1,970		1,689	55	73	18		9	8		1
CTI	1,318	840		478	12	15	3		3	2		1
YN	11,696	8,977		2,719	646	1,108	462		318	372	54	
LN	*	334			*	34			*	8		

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MARYLAND UNIV BALTIMORE COUNTY BALTIMORE

F/G 5/9

SELECTING PRESENTATION MODES ACCORDING TO PERSONNEL CHARACTERIS--ETC(U)

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A large grid of 120 small, dark, rectangular images, likely microfilm frames, arranged in 6 rows and 20 columns. Each frame contains faint, illegible text or graphics, characteristic of microfilm documentation.

TABLE 35 (cont'd)

Race Distribution by Ratings
Numbers and Gains/Losses
1972 v. 1976

Rating	White			72 v. 76			Black			72 v. 76			Other			72 v. 76		
	1972	1976		Gain	Loss		1972	1976		Gain	Loss		1972	1976		Gain	Loss	
Adm./Cler. (cont'd)																		
PN	6,709	5,890			819		297	496		199			472	650		178		
DP	3,146	2,745			401		95	190		95			78	117		39		
SK	8,209	6,416			1,793		795	1,005		210			1,750	1,869		119		
DK	1,254	1,237			17		78	148		70			909	997		88		
MS		8,228		8,228				1,214		1,214				7,620		7,620		
SH	2,970	2,784			186		1,008	1,263		255			398	1,077		679		
JO	544	722		178			26	50		24			11	17		6		
PC	1,011	823			188		105	220		115			34	55		21		
IS		916		916				23		23				8		8		
Misc.																		
LI	413	324			89		23	56		33			6	9		3		
DM	437	282			155		18	28		10			14	18		4		
MU	1,187	795			392		62	52					65	54				11
Eng./Hull																		
MM	20,120	22,101		1,981			703	852		149			346	749		403		
EN	8,634	7,497			1,137		466	456					415	495		80		
MR	2,544	2,221			323		63	91		28			122	306		184		
BT	9,760	9,610			150		669	715		46			120	291		171		

TABLE 35 (cont'd)

Race Distribution by Ratings
Numbers and Gains/Losses
1972 v. 1976

Rating	White		72 v. 76		Black	72 v. 76		Other		72 v. 76			
	1972	1976	Gain +	Loss -		1972	1976	Gain +	Loss -	1972	1976	Gain +	Loss -
Eng./Hull (cont'd)													
BR	176	97		79	13	10		3	3	4	1		
EM	11,438	10,469		969	360	464	104		972	1,624	652		
IC	5,056	5,208	152		116	250	134		58	92	34		
HT	10,653	10,115		538	546	650	104		180	182	2		
PM	159	162	3		3	6	3		13	32	19		
ML	224	228	4		8	8			5	9	4		
Const.													
CU	34	42	8		1			1	1			1	
EA	334	312		22	7	8	1		50	116	66		
CE	1,407	1,364		43	37	52	15		56	107	51		
EQ	29	32	3										
EO	2,796	2,454		342	77	81	4		32	40	8		
CM	1,597	1,361		236	44	44			54	90	36		
BU	2,287	2,560	273		61	92	31		67	90	23		
SW	828	772		56	24	24			10	14	4		
UT	1,087	1,385		298	59	72	13		26	50	24		

TABLE 35 (cont'd)
Race Distribution by Ratings
Numbers and Gains/Losses
1972 v. 1976

Rating	White		72 v. 76		Black		72 v. 76		Other		72 v. 76	
	1972	1976	Gain	Loss	1972	1976	Gain	Loss	1972	1976	Gain	Loss
Aviation												
AF	362	282		80	4	12	8		1			1
AV	276	242		34	3	4	1					
AD	527	420		107	15	16	1		2	4	2	
ADR	4,852	1,337		3,515	214	48			45	15		
ADJ	9,967	9,564		403	482	729	247		234	598	364	
AT	12,213	9,854		2,359	234	338	104		82	92	10	
AX	1,163	2,105	942		8	40	32		7	18	11	
AW	2,556	2,872	316		17	42	25		4	8	4	
AO	5,931	4,828		1,103	226	426	200		25	50	25	
AQ	3,983	3,435		548	80	104	24		31	21		10
AC	2,617	2,366		251	55	100	45		6	10	4	
AB	120	96		24	1	6	5					
ABE	1,236	1,111		125	65	120	55		6	33	27	
ABF	1,001	1,126	125		39	108	69		7	51	44	
ABH	2,214	2,002		212	185	344	159		18	71	53	
AE	8,685	7,353		1,332	290	473	183		34	133	99	
AM	352	288		64	14	21	7					
AMS	6,822	5,690		1,132	379	515	136		73	235	162	
AMH	5,548	4,966		582	278	388	110		84	324	240	
AME	2,372	2,398	26		57	85	28		12	54	42	
PR	1,991	1,673		318	42	54	12		6	23	17	
AG	1,693	1,646		47	28	47	19		5	11	6	

TABLE 35 (cont'd)
Race Distribution by Ratings
Numbers and Gains/Losses
1972 v. 1976

Rating	White		72 v. 76		Black		72 v. 76		Other		72 v. 76	
	1972	1976	Gain +	Loss -	1972	1976	Gain +	Loss -	1972	1976	Gain +	Loss -
Aviation (cont'd)												
TD	1,949	1,567		382	24	37	13		4	15	11	
AK	2,943	2,357		586	242	403	161		572	646	74	
AZ	2,913	2,353		560	132	340	208		79	213	134	
AS	529	415		114	32	22		10	4	17	13	
ASE	487	379		108	5	15	10		8	49	41	
ASH	441	348		93	18	17		1	5	27	22	
ASM	634	550		84	19	35	16		36	94	58	
PH	2,204	1,848		356	99	93		6	18	13		5
Medical												
HM	22,952	20,488		2,464	1,398	1,869	471		555	1,152	597	
Dental												
DT	2,858	2,778		80	228	401	173		171	253	82	

*Rating did not exist in 1972.

Note: CS, SD & PT ratings no longer existed in 1976.

interesting differences by pay grade clusters, occupation groups, and ratings. From Tables 36-40, one can see that in 1972 the amount of civilian education bore something of an inverse relationship to pay grade. That is to say, the percent of personnel with a high school diploma, some college work, and a college degree tended to be highest in lower pay grades and lowest in the higher pay grades. By 1976, however, the trend had reversed somewhat, with petty officers (E4-E9) having made sharp gains in many occupation groups in the percent with a high school diploma and only slight losses overall in personnel with college training. Apprentices (E1-E3), by contrast, had experienced a few gains and some losses among occupation groups in the percent with high school diplomas, but in most cases had suffered significant losses overall in college trained personnel. No doubt, the release from active duty of many well-educated, younger personnel after Vietnam explains the reversal in educational characteristics by pay grades from 1972 to 1976.

By the end of FY 76, in almost every occupation group, E4-E6 personnel were more likely than either E1-E3 or E7-E9 personnel to hold a high school diploma. Among E7-E9 personnel, the Deck group contained the lowest percent of high school graduates (57%). while among E1-E3 personnel, the Engineering and Hull group was lowest (62%). The breakdown by pay grade clusters and occupation groups of the percent of personnel who were high school graduates at the end of FY 76 was:

TABLE 36

Percent of Personnel by Occupation Groups with a High School Diploma or Greater
Total Enlisted Personnel
1972 to 1976

Occupation Group	H.S. Diploma ^a					H.S. Dipl. + Coll. ^b					College Degree ^c				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	55	57	58	60	61	13	12	11	10	10	2	1	1	*	*
Ordnance	61	63	65	66	67	15	14	12	11	10	1	1	*	*	*
Electronics	61	64	66	68	70	31	29	27	24	22	2	1	1	1	1
Precision Equip.	68	69	68	68	69	11	11	12	10	10	2	1	1	*	*
Adm./Cler.	58	61	63	65	67	17	14	12	12	12	5	3	2	1	1
Miscellaneous	59	57	56	58	61	9	7	7	8	7	1	1	1	1	1
Eng./Hull	63	61	60	62	64	9	8	7	7	7	*	*	*	*	*
Construction	60	62	64	66	68	9	7	6	6	6	*	*	*	*	*
Aviation	63	62	61	63	65	12	10	9	9	9	1	1	*	*	*
Medical	62	63	65	66	66	20	19	18	19	19	4	3	3	2	2
Dental	63	66	68	70	70	20	16	15	15	16	3	2	1	1	1

* Less than 1%.

^a High School Diploma. Does not include High School GED.

^b High school education plus some college education.

^c At least a baccalaureate degree, but also includes personnel with graduate degrees.

TABLE 37

Percent of Personnel by Occupation Groups with Educational Degrees
Pay Grades E1-E3
1972 to 1976

Occupation Group	H.S. Diploma ^a					H.S. Dipl. + Coll. ^b					College Degree ^c				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	62	67	67	66	64	20	15	11	7	8	5	2	1	*	*
Ordnance	65	71	70	64	65	16	11	7	6	6	3	1	*	*	*
Electronics	60	65	68	72	72	29	24	21	15	15	5	4	3	1	*
Precision Equip.	69	75	71	73	71	12	10	9	3	5	2	*	--	*	*
Adm./Cler.	62	71	72	70	68	19	12	8	8	9	7	2	1	1	1
Miscellaneous	60	57	56	58	61	9	7	7	8	7	1	1	*	1	1
Eng./Hull	65	58	54	55	59	7	4	3	3	3	*	*	*	*	*
Construction	68	67	68	70	72	7	5	4	4	3	*	*	*	*	*
Aviation	64	59	57	59	64	8	6	4	4	4	1	*	*	*	*
Medical	68	68	72	73	70	18	17	14	13	16	4	2	1	1	2
Dental	69	71	74	75	75	17	12	9	10	11	3	1	*	*	1

Note: A dash (--) means "no percent"

* Less than 1%.

^a High School Diploma. Does not include High School GED.

^b High school education plus some college education.

^c At least a baccalaureate degree, but also includes personnel with graduate degrees.

TABLE 38

Percent of Personnel by Occupation Groups with Educational Degrees
Pay Grades E4-E6
1972 to 1976

Occupation Group	H.S. Diploma ^a					H.S. Dipl. + Coll. ^b					College Degree ^c				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	57	58	60	62	63	13	12	11	10	10	1	2	1	*	*
Ordnance	63	64	67	69	70	16	15	13	12	11	1	1	*	*	*
Electronics	62	65	66	69	71	33	30	28	25	23	1	1	1	1	1
Precision Equip.	69	69	69	68	69	11	11	12	12	12	2	2	1	*	*
Adm./Cler.	58	59	63	66	68	16	15	13	13	13	5	4	3	2	1
Miscellaneous	52	53	54	57	58	22	21	23	22	21	14	14	11	10	9
Eng./Hull	64	65	67	69	69	12	12	11	11	11	*	*	*	*	*
Construction	58	60	63	65	67	10	7	8	8	7	1	*	*	*	*
Aviation	63	65	65	67	67	14	12	12	11	11	1	1	1	*	*
Medical	61	62	62	64	64	22	21	21	22	22	5	5	4	3	3
Dental	61	63	65	68	67	21	19	19	19	19	4	3	2	1	1

* Less than 1%.

^a High School Diploma. Does not include High School GED.

^b High school education plus some college education.

^c At least a baccalaureate degree, but also includes personnel with graduate degrees.

TABLE 39

Percent of Personnel by Occupation Groups with Educational Degrees
Pay Grades E7-E9
1972 to 1976

Occupation Group	H.S. Diploma ^a					H.S. Dipl. + Coll. ^b					College Degree ^c				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	41	43	44	45	47	9	9	10	10	10	*	*	*	*	*
Ordnance	48	50	50	52	56	11	11	12	12	13	*	*	*	*	*
Electronics	61	62	61	62	63	24	24	25	25	26	*	*	*	*	*
Precision Equip.	62	63	60	63	68	11	10	15	13	9	---	---	---	---	---
Adm./Cler.	53	55	53	54	56	16	13	13	13	13	*	*	*	*	*
Miscellaneous	53	54	52	53	52	25	24	25	25	24	3	4	6	6	8
Eng./Hull	47	49	51	54	58	5	5	5	6	7	*	*	*	*	*
Construction	48	50	50	50	52	9	9	10	10	10	*	*	*	*	*
Aviation	54	56	56	57	59	12	12	13	13	13	*	*	*	*	*
Medical	55	57	55	57	58	18	17	18	17	18	*	*	*	*	*
Dental	50	42	54	55	58	23	21	22	21	22	1	---	*	*	---

* Less than 1%.

^a High School Diploma. Does not include High School GED.

^b High school education plus some college education.

^c At least a baccalaureate degree, but also includes personnel with graduate degrees.

Note: A dash (--) means "no percent"

TABLE 40

Percent of Enlisted Personnel Who Are High School Graduates*
Occupation Groups/Ratings by Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	Pay Grades: E1-E3		Pay Grades: E4-E6		Pay Grades: E7-E9		Total Enlisted	
	1972	1976	1972	1976	1972	1976	1972	1976
Deck	BM	78	67	75	74	68	75	74
	MA	--	--	--	89	--	92	90
	QM	94	85	93	92	90	89	90
	SM	92	72	86	83	87	85	80
	OS	--	83	--	92	--	95	89
	EW	97	87	98	99	95	96	98
	ST	--	--	94	100	97	99	99
	STG	95	90	99	98	--	97	97
	STS	96	92	98	97	--	95	97
	OT	96	96	98	98	97	97	97
		94	83	88	88	84	87	87
	TM	91	71	90	88	89	92	84
	GM	--	--	--	--	81	82	82
Ordnance	GMM	94	77	93	90	82	92	85
	GMT	90	81	92	91	95	93	89
	GMC	84	76	78	79	71	77	78
	FT	--	--	--	--	97	96	96
	FTG	97	91	98	98	95	96	96
	FTM	99	91	97	98	94	92	96
	FTB	100	100	99	100	99	99	100
	MT	84	93	99	99	97	98	99
	MN	88	79	93	92	92	88	88
		92	81	91	92	88	91	90

TABLE 40 (cont'd)

Percent of Enlisted Personnel Who Are High School Graduates*
Occupation Groups/Ratings by Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	Pay Grades: E1-E3		Pay Grades: E4-E6		Pay Grades: E7-E9		Total Enlisted	
	1972	1976	1972	1976	1972	1976	1972	1976
ET	--	--	98	99	96	97	97	98
	99	96	100	100	--	--	100	99
	98	93	100	100	--	--	100	99
	100	95	99	100	95	99	99	99
Electronics	99	95	100	100	96	97	99	99
PI	--	--	--	--	100	100	100	100
IM	93	90	91	94	97	95	93	94
OM	91	74	95	90	97	100	94	87
Precision Equip.	92	82	93	92	97	98	93	91
NC	--	--	--	91	--	94	--	93
RM	90	88	98	92	94	94	93	91
CTT	100	89	99	98	96	97	99	95
CTA	100	96	99	99	98	98	99	98
CTM	100	100	99	99	95	97	99	99
CTO	99	93	99	99	94	97	99	97
CTR	100	93	98	96	95	95	98	95
CTI	100	94	99	99	97	96	99	98
YN	97	93	94	94	93	93	94	94
LN	--	--	--	97	--	94	--	96
PN	98	94	95	95	91	91	95	95
DP	98	94	97	97	95	96	97	96
SK	94	87	88	91	82	86	88	89

TABLE 40 (cont'd)

Percent of Enlisted Personnel Who Are High School Graduates *
Occupation Groups/Ratings by Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	Pay Grades: E1-E3		Pay Grades: E4-E6		Pay Grades: E7-E9		Total Enlisted	
	1972	1976	1972	1976	1972	1976	1972	1976
DK	99	94	93	96	81	86	92	95
MS	--	74	--	84	--	77	--	81
CS	85	--	75	--	72	--	77	--
SH	80	80	73	82	71	75	73	81
JO	99	98	96	98	97	99	97	98
PC	88	81	92	89	93	94	92	88
IS	--	96	--	98	--	95	--	97
Adm./Cler.	94	86	91	91	89	90	91	90
LI	93	89	91	90	81	96	90	91
DM	100	100	96	97	97	95	97	97
MU	99	97	97	97	94	94	97	97
SN	78	78	--	--	--	--	78	78
Miscellaneous	78	78	95	95	92	94	79	79
MM	94	80	93	94	87	92	83	91
EN	88	82	83	84	86	88	84	84
MR	94	85	93	93	91	93	93	91
BT	85	57	80	75	81	85	81	69
BR	--	--	74	70	85	79	80	75
EM	93	91	96	97	92	95	95	95
IC	95	90	98	96	93	96	97	94
HT	88	80	84	84	83	86	85	83

TABLE 40 (cont'd)

Percent of Enlisted Personnel Who Are High School Graduates*
Occupation Groups/Ratings by Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	Pay Grades: E1-E3		Pay Grades: E4-E6		Pay Grades: E7-E9		Total Enlisted	
	1972	1976	1972	1976	1972	1976	1972	1976
Eng./Hull	PM	94	86	90	100	95	92	92
	ML	89	71	83	80	82	84	79
	FN	77	66	--	--	--	77	66
		82	72	90	87	90	86	83
	CU	--	--	--	92	92	92	92
	EA	100	99	98	98	98	99	98
	CE	92	88	92	95	92	91	91
	EQ	--	--	--	97	100	97	100
	EO	85	84	80	83	82	80	82
	CM	89	86	86	87	87	85	86
Construction	BU	89	87	90	85	88	86	89
	SW	88	82	83	84	82	83	82
	UT	87	83	88	88	89	85	86
	CN	83	86	--	--	--	83	86
		84	85	87	87	88	84	86
		--	--	--	95	96	95	96
	AF	--	--	--	95	94	95	94
	AV	--	--	--	92	93	92	93
	AD	--	--	--	86	87	84	86
	ADR	86	87	86	89	89	89	87
	ADJ	89	85	87	96	95	97	97
	AT	98	93	97	95	97	96	96
	AX	98	92	97	95	97	96	96

TABLE 40 (cont'd)

Percent of Enlisted Personnel Who Are High School Graduates *

Occupation Groups/Ratings by Pay Grade Categories

1972 v. 1976

Occupation Group/Rating	Pay Grades: E1-E3		Pay Grades: E4-E6		Pay Grades: E7-E9		Total Enlisted	
	1972	1976	1972	1976	1972	1976	1972	1976
AW	97	93	96	94	94	95	96	94
AO	93	74	90	83	86	89	90	81
AQ	98	92	99	98	96	98	98	98
AC	99	93	96	96	96	95	96	96
AB	--	--	--	--	87	86	87	86
ABE	88	71	87	79	81	80	87	75
ABF	81	70	85	80	81	80	86	77
ABH	88	72	81	74	78	82	82	74
AE	94	87	94	91	94	93	94	90
AM	--	--	--	--	93	94	93	94
AMS	89	79	88	85	92	92	89	84
AMH	89	78	89	86	89	90	89	84
AME	87	76	91	88	88	90	90	85
PR	94	75	90	86	91	90	91	83
AG	98	95	97	98	95	94	97	97
TD	98	97	98	97	95	98	98	97
AK	94	87	90	91	88	93	90	90
AZ	97	87	95	94	95	97	95	93
AS	--	--	82	90	90	91	85	90
ASE	98	89	97	93	--	--	97	92
ASH	82	81	93	94	--	--	93	90
ASM	93	83	86	79	--	--	87	80
PH	98	96	94	96	95	96	95	96
PT	99	--	99	--	97	--	99	--
AN	73	75	--	--	--	--	73	75
Aviation	82	80	92	90	92	93	89	87

TABLE 40 (cont'd)

Percent of Enlisted Personnel Who Are High School Graduates *
Occupation Groups/Ratings by Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	Pay Grades: E1-E3		Pay Grades: E4-E6		Pay Grades: E7-E9		Total Enlisted	
	1972	1976	1972	1976	1972	1976	1972	1976
HM	95	96	96	96	93	94	96	96
DT	95	95	96	96	92	96	95	96

*High school percentages were calculated from figures in Vol. 2 of this report by subtracting "no degree" percentages from 100%. The sum of the percentages for an occupation group for any year in Table 38 is less than the percentage for an occupation group in the "Total Enlisted" column of Table 40. One reason for this is that Table 38 excludes high school GED percentages; another is that fractions of a percent for the figures in the three columns of Table 38 were rounded down by the computer. For example, Table 40 shows 87% of the total enlisted in the Deck group for 1976; while the aggregate of the Deck group figures for 1976 in Table 38 is only 73%. However, 13% of the Deck group in 1976 were personnel with a H.S. GED. Thus, 73% + 13% + (the effect of rounding down of percentages in Table 38) = 87%.

Note: A dash (--) means "no percent."

<u>Occupation Group</u>	<u>E1-E3</u>	<u>E4-E6</u>	<u>E7-E9</u>
Deck	72	73	57
Ordnance	71	81	69
Electronics	87	95	89
Precision Equipment	76	81	77
Adm./Clerical	78	82	69
Miscellaneous	69	88	84
Engineering/Hull	62	80	65
Construction	75	74	62
Aviation	69	78	72
Medical	88	89	76
Dental	87	87	80

Table 40 reports higher percentages of high school graduates for occupation groups than the aggregate percentages of Tables 36-39, because Table 40 includes high school GED figures and the latter tables do not. Table 40 percents can also be as much as 0.9% lower than actual because of rounding down by the computer. However, Table 40 is consistent with Tables 36-39 in that both report a pattern in which percentage of high school graduates declined between 1972 and 1976 for E1-E3 personnel and improved or remained fairly constant for E4-E6 and E1-E9 personnel.

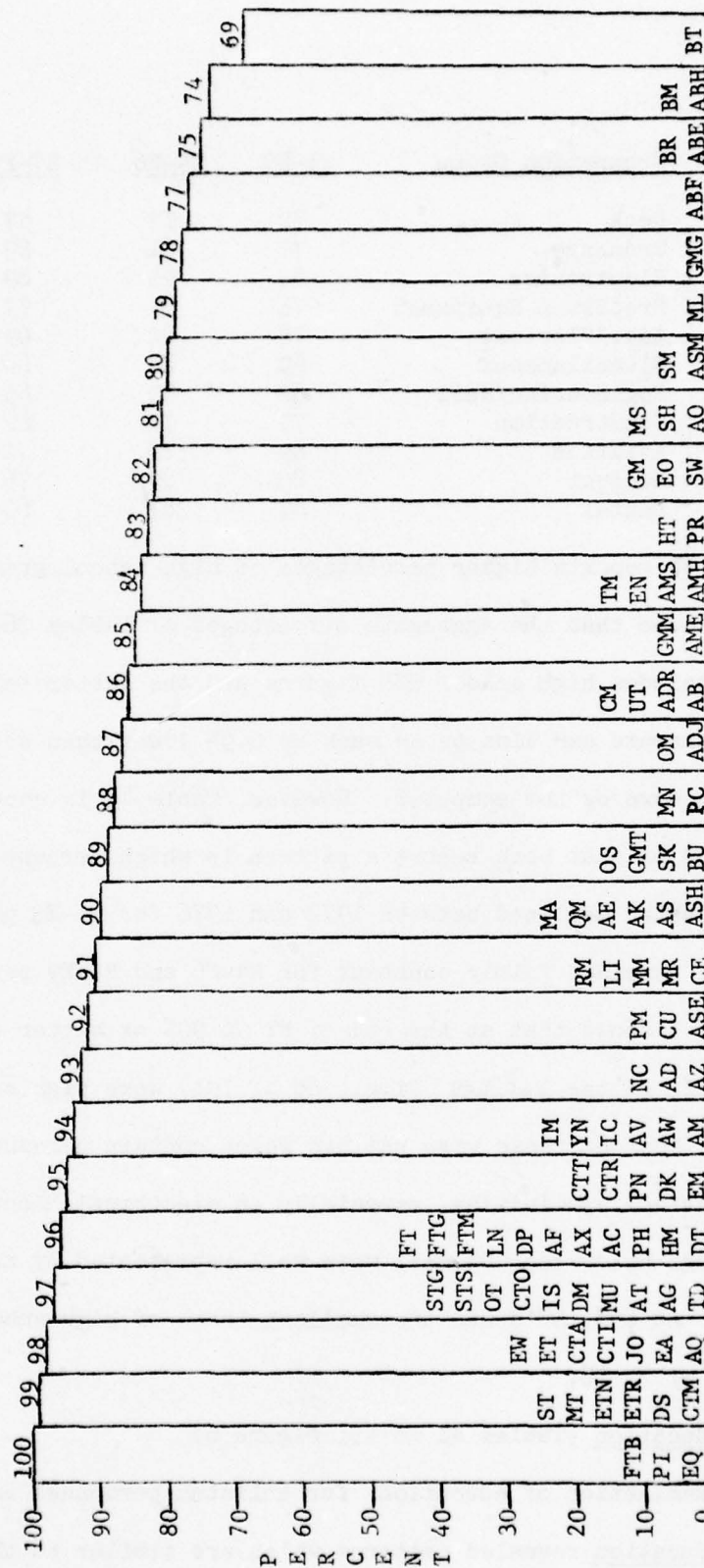
Figure 5 shows that at the end of FY 76 90% or better of personnel in almost 2/3 of the ratings (i.e., 65 of 101) were high school graduates. Most of these were ratings which contain personnel with highly technical specialties, especially in electrical/electronic fields, while ratings below the 90% mark were well represented by mechanical occupations. At 69%, BT's had the smallest share of high school graduates at the end of FY 76.

Years of Education (Tables 41 to 45; Figure 6)

The examination of education for enlisted personnel in terms of years of education revealed patterns which are similar to those found

FIGURE 5

Percent of High School Graduates
Ratings: Highest to Lowest
1976



by educational level. Just as the percentage of E1-E3 personnel completing college work declined during the 1972-76 period, so also these pay grades declined in their share of personnel with "13-20" years of education in each occupation group. Losses in shares of the "13-20" years category by E1-E3 personnel were much greater than those for E4-E6 personnel; those for E4-E6 personnel, slightly greater than those for E7-E9 personnel, for which the percentages generally held steady or even increased slightly.

For E1-E3 pay grades, six occupation groups (Deck, Ordnance, Electronics, Precision Equipment, Adm./Clerical, and Dental) slipped from 8 to 19 percent in personnel with more than 12 years of education. By comparison, (except for the Electronics group which decreased 10% in the E4-E6 category) all occupation groups lost only 1-6% for E4-E6 personnel; and 1-3% for E7-E9 personnel in three occupation groups, while staying even or slightly increased in the remaining eight. Overall, at the end of FY 76, the share of personnel with 13-20 years of education by occupation groups ranged from a high of 22-23% (Electronics and Medical) to a low of 6-8% (Construction and Eng./Hull).

There was no significant change (1972 v. 1976) in the percent of personnel with at least 9 to 12 years of education (the sum of categories "9-12" and "13-20" in Tables 41, 42, 43 and 44). At 97-99% at the end of FY 76, the share of personnel with 9-12 years of education remained the same or increased only slightly in every occupation group as compared to FY 72. Presently, there are no differences by pay grade clusters in the percent of personnel who have at least 9-12 years of

TABLE 41

Years of Education Categories by Occupation Groups
Percent of Total Enlisted Personnel in Each Category
1972 to 1976

Occupation Group	0-8 Years					9-12 Years					13-20 Years				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	2			1	1	81	83	85	87	87	15	13	12	11	11
Ordnance	1	1	1	1	*	81	82	84	86	88	16	15	13	11	11
Electronics	*	*	*	*	*	66	68	70	73	76	33	31	29	26	23
Precision Equip.	*	*	*	*	*	84	86	85	88	88	14	12	13	11	10
Adm./Cler.	1	1	*	*	*	76	80	83	85	85	22	18	15	14	14
Miscellaneous	1	1	1	*	*	86	89	89	88	90	11	8	8	10	9
Eng./Hull	1	2	1	1	*	87	88	90	90	90	10	8	8	8	8
Construction	2	2	1	1	1	86	89	90	91	91	10	7	7	7	6
Aviation	1	1	1	*	*	84	87	88	89	89	13	11	10	10	10
Medical	*	*	*	*	*	74	76	77	78	77	25	23	22	21	22
Dental	*	*	*	*	*	76	80	83	82	82	23	18	16	16	17

*Less than 1%

TABLE 42

Years of Education Categories by Occupation Groups
Percent of Pay Grades E1-E3 Personnel in Each Category
1972 to 1976

Occupation Group	0-8 Years					9-12 Years					13-20 Years				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	*	*	*	*	*	74	82	87	91	89	25	17	12	8	9
Ordnance	*	*	*	*	*	79	87	91	93	93	20	12	8	6	6
Electronics	*	--	--	--	--	64	71	76	82	83	35	28	23	17	16
Precision Equip.	--	--	--	--	--	84	88	90	95	94	15	11	9	4	5
Adm./Cler.	*	*	*	*	*	72	84	89	90	88	26	15	10	9	10
Miscellaneous	1	1	1	1	1	87	89	90	89	90	10	8	8	9	8
Eng./Hull	1	1	1	1	1	90	93	95	95	95	8	4	3	3	4
Construction	1	1	1	1	1	90	92	94	95	95	8	6	5	4	4
Aviation	1	1	1	1	1	88	91	93	94	93	10	6	5	4	6
Medical	*	*	*	*	*	77	80	83	84	80	22	19	16	15	19
Dental	*	*	*	*	*	78	86	90	88	86	21	13	9	10	13

*Less than 1%

TABLE 43

Years of Education Categories by Occupation Groups
Percent of Pay Grades E4-E6 Personnel in Each Category
1972 to 1976

Occupation Group	0-8 Years					9-12 Years					13-20 Years				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	2	2	2	1	1	82	83	85	86	86	15	14	12	11	11
Ordnance	1	1	1	1	*	80	81	83	86	87	17	16	14	12	11
Electronics	*	*	*	*	*	64	67	69	72	75	34	32	29	27	24
Precision Equip.	1	1	*	1	*	84	85	84	85	86	14	13	14	13	13
Adm./Cler.	1	1	1	*	*	76	78	81	83	84	22	20	17	15	15
Miscellaneous	*	*	*	*	*	63	63	65	67	68	36	36	34	32	31
Eng./Hull	2	1	1	1	*	84	85	85	86	87	13	13	12	11	11
Construction	3	3	2	2	2	84	87	87	88	89	11	8	9	9	8
Aviation	1	1	*	*	*	82	84	85	86	87	16	14	13	12	12
Medical	*	*	*	*	*	72	73	73	73	73	27	26	26	26	25
Dental	*	*	*	*	*	74	76	77	79	79	25	23	22	20	20

*Less than 1%

TABLE 44

Years of Education Categories by Occupation Groups
Percent of Pay Grades E7-E9 Personnel in Each Category
1972 to 1976

Occupation Group	0-8 Years					9-12 Years					13-20 Years				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	4	3	3	2	2	86	86	86	86	86	9	9	10	11	11
Ordnance	2	2	2	2	1	86	85	85	84	84	11	11	12	13	13
Electronics	*	*	*	*	*	74	75	73	73	72	24	24	26	26	26
Precision Equip.	--	*	*	--	--	87	88	83	86	90	12	10	15	13	9
Adm./Cler.	1	1	1	1	*	83	84	84	84	84	14	13	13	14	14
Miscellaneous	--	--	*	*	*	71	70	67	66	66	28	29	31	32	32
Eng./Hull	3	3	2	2	1	91	91	91	91	90	5	5	5	6	7
Construction	2	2	2	2	1	87	87	87	86	87	9	10	10	10	10
Aviation	1	1	*	*	*	85	86	85	85	85	12	12	13	13	13
Medical	*	*	*	*	*	79	81	80	80	80	19	18	19	18	18
Dental	*	*	*	*	--	75	78	76	77	77	24	21	22	22	22

*Less than 1%

Note: A dash (--) means "no percent"

education.

These findings make it clear that today apprentices (E1-E3) do not have the extensive post-secondary school educational background which apprentices brought into the Navy during Vietnam. Although far ahead of petty officers (E4-E9) in 1972 in the percent of personnel with over 12 years of education, apprentices actually had slipped behind petty officers in every occupation group for the end of FY 76.

At the end of FY 76, the percent of personnel in each rating with over 12 years of civilian education ranged from 1-25% for the great majority of ratings (96 of 101). As Table 45 and Figure 6 show, only ET's (30%), EA's (36%), CTI's (40%), JO's (40%), and MU's (43%) exceeded this range. As with educational level correlations, these highly technical ratings from the electrical/electronic fields had a higher incidence of personnel with more than 12 years of education than the mechanical ratings.

Aptitude Scores (Tables 46 to 52; Figure 7)

For personnel in E7-E9 pay grades, the average GCT¹ score changed little if at all by occupation group from 1972 to 1976. By contrast, GCT improved in every occupation group (sometimes only slightly) except Adm./Clerical for E4-E6 personnel, and GCT rose slightly or remained the same for apprentices (E1-E3) in every occupation group except Eng./Hull and Dental.

Within occupation groups, average GCT/WK had mixed patterns by pay

¹GCT only for 1972 to 1975; in 1976, GCT for the first six months, and WK for the second six months.

TABLE 45

Percent of Enlisted Personnel with 13 or More Years of Education
Occupation Groups/Ratings by Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
BM	2	3	3	3	2	3	3	3
MA	--	--	--	10	--	12	--	11
QM	25	11	22	16	12	12	21	14
SM	20	6	11	5	6	7	12	6
OS	--	10	--	14	--	13	--	12
RD	27	--	23	--	14	--	23	--
EW	9	8	23	17	11	16	20	17
ST	--	--	22	--	16	25	19	25
STG	32	13	25	16	--	18	26	16
STS	17	6	20	14	--	16	20	14
OT	36	13	30	27	23	27	31	23
Deck	25	9	15	11	9	11	15	11
TM	14	4	11	8	5	8	11	7
GM	--	--	--	--	4	2	4	2
GMM	8	4	13	9	--	4	11	7
GMT	11	3	13	10	14	12	13	8
GMG	13	2	4	5	--	1	5	4
FT	--	--	--	--	25	23	25	23
FTG	30	12	27	16	15	17	26	15
FTM	36	10	30	17	15	22	29	17
FTB	--	--	25	18	24	18	25	18
MT	33	--	18	10	24	23	19	11
MN	14	3	16	8	9	10	14	7
Ordnance	20	6	17	11	11	13	16	11
ET	--	--	37	32	24	26	32	30
ETN	35	16	32	21	--	--	32	21
ETR	34	15	34	22	--	--	34	21
DS	37	14	44	24	24	28	42	24
Electronics	35	16	34	24	24	26	33	23
PI	--	--	--	--	25	--	25	--
IM	9	5	15	11	9	12	13	10
OM	24	5	12	15	13	9	15	11
Precision Equip.	15	5	14	13	12	9	14	10

TABLE 45 (cont'd)

Percent of Enlisted Personnel with 13 or More Years of Education
Occupation Groups/Ratings by Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
NC	--	--	--	11	--	14	--	13
RM	21	7	19	11	11	9	19	9
CTT	46	9	38	25	15	15	37	19
CTA	41	11	52	30	17	21	44	23
CTM	12	25	43	24	29	32	42	25
CTO	40	11	43	25	12	18	38	19
CTR	29	10	34	19	10	13	29	15
CTI	65	24	61	47	31	32	58	40
YN	27	13	25	18	17	16	24	17
CYN	10	--	29	--	--	--	23	--
LN	--	--	--	18	--	16	--	18
PN	44	24	29	26	23	22	31	25
DP	30	14	25	21	16	18	25	19
SK	21	13	18	14	12	10	17	13
DK	36	21	24	21	29	28	26	22
MS	--	5	--	5	--	7	--	5
CS	11	--	5	--	3	--	6	--
SD	--	--	--	--	--	--	--	--
SH	4	11	4	9	3	2	4	9
JO	49	23	52	45	47	38	50	40
PC	11	7	10	7	13	9	10	7
IS	--	13	--	22	--	30	--	21
Adm./Cler.	26	10	22	15	14	14	22	14
LI	5	3	11	11	7	11	10	10
DM	37	30	27	19	20	23	28	20
MU	43	39	50	45	36	40	46	43
SN	10	8	--	--	--	--	10	8
Miscellaneous	10	8	36	31	28	32	11	9
MM	11	4	18	4	5	8	15	12
EN	9	2	5	4	4	3	5	4
MR	8	2	9	9	4	6	8	7
BT	6	1	3	3	1	2	4	2
BR	--	--	--	--	2	3	1	1
EM	18	10	19	18	10	13	18	16
IC	18	6	19	14	12	14	18	12
HT	11	3	6	4	2	2	7	4

TABLE 45 (cont'd)

Percent of Enlisted Personnel with 13 or More Years of Education
Occupation Groups/Ratings by Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
PM	15	10	6	14	23	15	10	13
ML	3	3	10	8	2	4	7	6
FN	6	3	--	--	--	--	6	3
Eng. & Hull	8	4	13	11	5	7	10	8
CU	--	--	--	--	22	19	22	19
EA	52	35	52	33	56	54	53	36
CE	7	6	11	10	12	13	10	9
EQ	--	--	--	--	17	15	17	15
EO	8	2	7	5	5	8	7	4
CM	6	2	8	6	7	4	7	5
BU	10	4	13	8	7	7	12	6
SW	5	1	11	5	5	11	8	5
UT	4	1	8	5	8	6	7	4
CN	4	2	--	--	--	--	4	2
Construction	8	4	11	8	9	10	10	6
AF	--	--	--	--	18	13	18	13
AV	--	--	--	--	29	22	29	22
AD	--	--	--	--	8	7	8	7
ADR	7	4	7	4	5	6	7	4
ADJ	6	4	6	6	5	5	6	5
AT	25	14	29	20	21	22	28	19
AX	22	13	23	20	21	26	22	19
AW	41	10	33	20	20	26	32	19
AO	8	3	11	5	9	9	10	5
AQ	22	13	31	21	24	28	29	21
AC	29	11	27	10	15	16	25	18
AB	--	--	--	--	9	9	9	9
ABE	6	4	6	4	3	4	5	4
ABF	5	3	5	4	3	2	5	4
ABH	8	2	5	3	2	2	5	3
AE	11	4	14	9	10	10	13	8
AM	--	--	--	--	9	6	9	6
AMS	7	3	6	5	4	4	6	5
AMH	7	4	6	7	4	5	6	6
AME	6	2	9	7	4	6	8	5
PR	14	5	10	7	7	7	10	7

TABLE 45 (cont'd)

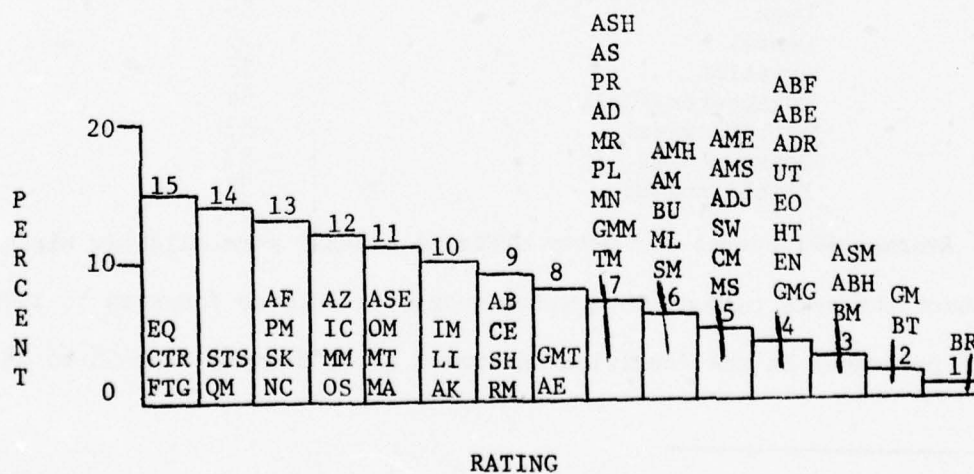
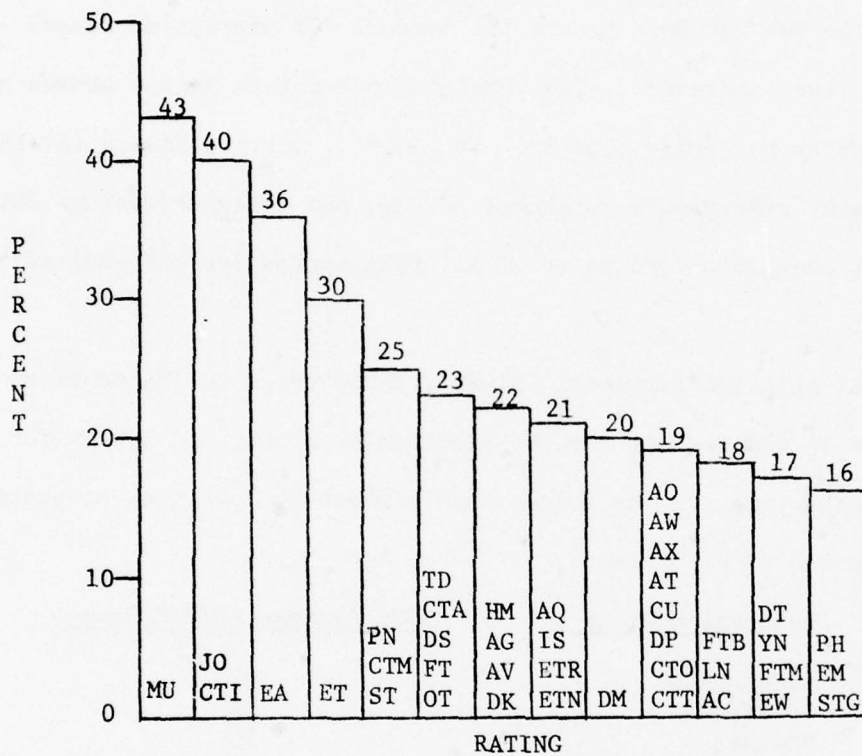
Percent of Enlisted Personnel with 13 or More Years of Education
Occupation Groups/Ratings by Pay Grade Categories
1972 v. 1976

Occupation Group/Rating		E1-E3		E4-E6		E7-E9		Total	
		1972	1976	1972	1976	1972	1976	1972	1976
	AG	34	17	26	25	23	17	27	22
	TD	48	15	37	25	27	30	38	23
	AK	21	12	11	10	9	8	12	10
	AZ	23	10	20	13	12	12	20	12
	AS	--	--	2	7	6	8	3	7
	ASE	23	4	29	14	--	--	28	11
	ASH	13	2	15	8	--	--	14	7
	ASM	18	1	43	4	--	--	10	3
	PH	27	11	22	18	19	17	23	16
	PT	35	--	27	--	32	--	29	--
	AN	5	5	--	--	--	--	5	5
Aviation		10	6	16	12	12	13	13	10
Medical	HM	22	19	27	25	19	18	25	22
Dental	DT	21	13	25	20	24	22	23	17

Note: The dash (--) means "no percent"

FIGURE 6

Percent of Personnel with 13 or More Years of Education
 Ratings: Highest to Lowest
 1976



grade levels at the end of FY-76. Overall averages for Electronics, Precision Equipment, Miscellaneous, Aviation and Dental Occupation groups increased in going from the E1-E3 to E4-E6, and from the E4-E6 to E7-E9 clusters; while for the Deck group, the overall GCT average decreased as pay grade level increased. The remaining occupation groups showed no clear patterns by pay grade cluster. In general, petty officers (E4-E6), and particularly supervisory personnel (E7-E9, had a higher average GCT score in most occupation groups (8 of 11) than apprentices (E1-E3) at the end of FY 76.

For total enlisted personnel (E1-E9), the average GCT/WK score at the end of FY 76 was highest for the Electronics group, and lowest for the Miscellaneous group. The scores from highest to lowest by occupation groups at the end of FY 76 were:

<u>Occupation Group</u>	<u>1976 Average GCT/WK Score</u>
Electronics	63
Ordnance	58
Medical	58
Precision Equipment	57
Deck	56
Dental	56
Aviation	55
Engineering/Hull	54
Adm./Clerical	53
Construction	53
Miscellaneous	52

Average ARI scores for petty officers (E4-E9) were slightly higher or about the same in most occupation groups in 1976 as compared to 1972. E4-E6 personnel in the Precision Equipment group dropped from 56 to 54,

¹ARI only for 1972 to 1975; in 1976, GCT for the first six months and WK for the second six months.

whereas apprentices (E1-E3) had increased their average arithmetic aptitude score in some occupation groups (i.e., Deck, Electronics, Miscellaneous, Medical and Dental), and decreased in others (i.e., Ordnance, Precision Equipment, Eng./Hull, and Construction) by the end of FY 76. The sharpest change for Apprentices was a loss of 6 points for the Precision Equipment group for the 1972-76 period.

Analysis by pay grade levels showed that at the end of FY 76 the average ARI/AR score was highest for E7-E9 personnel, and lowest for E1-E3 personnel in every occupation group: except Deck. The lowest score for any occupation group and pay grade level was 49, the average score for E1-E3 personnel in the Eng./Hull occupation group; however, E1-E3 personnel in five other occupation groups (Precision Equipment, Miscellaneous, Construction, Aviation, and Dental) had an average score of only 51. Except for a 51 for E4-E6 personnel in the Adm./Clerical group, neither petty officer group (i.e., E4-E6 or E7-E9) had ARI/AR scores lower than 52 in any occupation group at the end of FY 76.

For total personnel (E1-E9), the average ARI/AR score was highest for the Electronics groups, and lowest for the Miscellaneous and the Construction groups. The scores from highest to lowest by occupation groups at the end of FY 76 were:

<u>Occupation Group</u>	<u>1976 Average ARI/AR Score</u>
Electronics	62
Ordnance	56
Medical	55
Deck	54
Precision Equipment	53
Aviation	53
Adm./Clerical	52
Engineering/Hull	52
Dental	52

Occupation Group
(cont'd from previous page)

1976 Average
ARI/AR Score

Miscellaneous
Construction

51
51

Average MECH¹ scores for petty officers (E4-E9) did not change significantly from 1972 to 1976. For E7-E9 personnel they were identical in 1972 and in 1976 in ten or eleven occupation groups; for E4-E6 personnel, MECH scores increased or remained the same for all occupation groups. MECH score data for E1-E3 personnel in 1972 were adequate in only one occupation group (Aviation) for reporting overall changes (51 to 52), but for individual ratings, it appears that changes in MECH scores over this period for E1-E3 personnel were slight.

As in the case of GCT and ARI scores, average MECH scores tend to become higher at each pay grade level reported. At the end of FY 76, scores for the E7-E9 cluster, for example, were higher than those for the E1-E3 cluster in every occupation group (except Deck where they were equal); and higher than those of the E4-E6 cluster in nine out of eleven occupation groups. E4-E6 personnel had higher average MECH/MC scores than E1-E3 personnel in four occupation groups (Electronics, Eng./Hull, Aviation, and Dental); had equal average scores in six (Deck, Ordnance, Precision Equipment, Miscellaneous, Construction and Medical); and had lower scores in one (Adm./Clerical).

For total personnel (E1-E9), the average MECH/MC score was highest for the Electronics and Precision Equipment groups, and lowest for the Adm./Clerical group at the end of FY 76. It was interesting, and somewhat curious, to note that mechanically-oriented occupation groups like Ordnance and Eng./Hull turned in average mechanical aptitude scores which

¹MECH only for 1972 to 1975; in 1976, MECH for the first six months and MC for the second six months.

TABLE 46

Average Aptitude Scores by Occupation Groups
Total Enlisted Personnel
1972 to 1976

Occupation Group	GCT/WK ^a					ARI/AR ^b					MECH/MC ^c					
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76	
Deck	53	55	55	56	56	52	54	54	53	54	49	50	50	51	51	
Ordnance	53	57	58	58	58	54	56	56	56	56	52	53	54	54	54	
Electronics	56	64	64	63	63	59	62	62	62	62	*	56	56	56	56	
Precision Equip.	55	58	58	58	57	56	54	54	53	53	57	57	57	57	56	
Adm./Cler.	54	54	53	53	53	51	53	52	52	52	48	48	47	47	47	
Miscellaneous	51	51	50	51	52	49	49	48	49	51	*	47	48	48	50	
Eng./Hull	52	54	54	54	54	54	52	52	52	52	53	53	53	53	54	
Construction	52	53	53	53	53	53	51	51	51	51	54	54	54	54	54	
Aviation	52	54	54	54	55	53	53	52	52	53	53	52	52	53	53	
Medical	55	58	58	58	58	52	55	54	54	55	50	50	50	50	50	
Dental	55	57	56	56	56	51	53	52	52	52	50	49	49	48	49	

* Insufficient N for a reliable average score.

^a GCT = General Classification Test; WK = Word Knowledge

GCT only for 72, 73, 74, 75; in 76, GCT for first six months, and WK for the second six months

^b ARI and AR = Arithmetic Reasoning

ARI only for 72, 73, 74, 75; in 76, ARI for first six months, and AR for the second six months

^c MECH and MC = Mechanical Comprehension

MECH only for 72, 73, 74, 75; in 76, MECH for first six months, and MC for the second six months

TABLE 47

Average Aptitude Scores by Occupation Groups
Pay Grades E1-E3
1972 to 1976

Occupation Group	GCT/WK ^a					ARI/AR ^b					MECH/MC ^c				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	57	59	59	58	58	53	55	55	54	54	*	49	50	50	51
Ordnance	55	59	60	58	57	55	55	55	54	54	*	53	53	54	54
Electronics	56	62	63	62	61	57	61	60	60	59	*	54	54	56	55
Precision Equip.	55	59	58	57	56	57	53	52	51	51	*	56	57	57	56
Adm./Cler.	56	54	53	53	55	52	52	51	51	52	*	47	46	47	48
Miscellaneous	51	50	50	51	52	49	49	48	49	51	*	47	47	48	50
Eng./Hull	52	52	51	50	51	53	50	48	48	49	*	51	52	52	53
Construction	51	53	53	53	53	53	51	51	50	51	*	53	53	54	54
Aviation	51	51	51	52	53	51	49	49	49	51	51	50	50	51	52
Medical	55	58	57	57	58	51	54	53	53	54	*	48	49	49	50
Dental	55	56	55	55	55	50	52	50	51	51	*	48	47	47	48

* Insufficient N for a reliable average score.

^aGCT = General Classification Test; WK = Word Knowledge
GCT only for 72, 73, 74, 75; in 76, GCT for first six months, and WK for the second six months

^bARI and AR = Arithmetic Reasoning
ARI only for 72, 73, 74, 75; in 76, ARI for first six months, and AR for the second six months

^cMECH and MC = Mechanical Comprehension
MECH only for 72, 73, 74, 75; in 76, MECH for first six months, and MC for the second six months

TABLE 48

Average Aptitude Scores by Occupation Groups
Pay Grades E4-E6
1972 to 1976

Occupation Group	GCT/WK ^a					ARI/AR ^b					MECH/MC ^c					
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76	
Deck	52	55	55	55	56	52	54	54	54	54	48	50	50	51	51	
Ordnance	52	58	58	58	58	54	56	56	56	56	51	53	53	54	54	
Electronics	55	64	63	63	63	58	62	62	62	62	*	56	56	56	56	
Precision Equip.	54	57	58	58	57	56	54	54	54	54	*	57	57	57	56	
Adm./Cler.	53	54	52	52	52	51	53	52	52	51	47	48	47	47	47	
Miscellaneous	54	57	56	56	56	53	55	54	53	53	50	51	51	51	50	
Eng./Hull	51	56	56	57	56	55	55	55	55	55	52	55	54	55	55	
Construction	51	52	52	53	53	53	51	51	52	52	*	54	54	54	54	
Aviation	52	56	56	56	55	54	54	54	54	54	52	54	53	53	53	
Medical	54	59	59	58	58	52	56	56	55	55	*	50	50	50	50	
Dental	54	57	57	56	56	52	55	54	53	53	49	50	50	49	49	

* Insufficient N for a reliable average score.

^a GCT = General Classification Test; WK = Word Knowledge

GCT only for 72, 73, 74, 75; in 76, GCT for first six months, and WK for the second six months

^b ARI and AR = Arithmetic Reasoning

ARI only for 72, 73, 74, 75; in 76, ARI for first six months, and AR for the second six months

^c MECH and MC = Mechanical Comprehension

MECH only for 72, 73, 74, 75; in 76, MECH for first six months, and MC for the second six months

TABLE 49

Average Aptitude Scores by Occupation Groups
Pay Grades E7-E9
1972 to 1976

Occupation Group	GCT/WK ^a						ARI/AR ^b						MECH/MC ^c					
	72	73	74	75	76		72	73	74	75	76		72	73	74	75	76	
Deck	53	54	54	54	54		52	52	52	53	53		51	51	51	51	51	
Ordnance	56	56	56	57	58		54	54	55	55	56		55	55	55	55	55	
Electronics	64	64	64	64	64		62	62	62	62	62		59	59	59	59	59	
Precision Equip.	59	59	59	59	58		54	53	53	54	54		58	58	58	58	58	
Adm./Cler.	54	54	53	53	53		53	53	53	53	53		49	49	49	48	49	
Miscellaneous	59	59	58	59	59		56	56	55	55	55		53	53	52	52	52	
Eng./Hull	53	53	53	53	54		52	52	52	53	53		55	55	55	55	55	
Construction	55	55	55	55	55		52	53	53	53	53		56	56	56	56	56	
Aviation	57	57	57	57	57		55	55	55	55	55		55	55	55	55	55	
Medical	58	58	58	58	58		54	55	55	55	55		51	51	51	51	51	
Dental	57	57	57	57	57		53	54	54	54	55		50	51	50	50	50	

^a GCT = General Classification Test; WK = Word Knowledge
GCT only for 72, 73, 74, 75; in 76, GCT for first six months, and WK for the second six months

^b ARI and AR = Arithmetic Reasoning
ARI only for 72, 73, 74, 75; in 76, ARI for first six months, and AR for the second six months

^c MECH and MC = Mechanical Comprehension
MECH only for 72, 73, 74, 75; in 76, MECH for first six months, and MC for the second six months

were lower than those for the Electronics group. On the other hand, it might be expected that occupation groups which normally do not work on equipment, like the Medical, Dental, and Adm./Clerical occupation groups, had the lowest average mechanical aptitude scores of all. The scores from highest to lowest by occupation groups at the end of FY 76 were:

<u>Occupation Group</u>	<u>1976 Average MECH/MC Score</u>
Electronics	56
Precision Equipment	56
Ordnance	54
Engineering/Hull	54
Construction	54
Aviation	53
Deck	51
Miscellaneous	50
Medical	50
Dental	49
Adm./Clerical	47

Table 50 contains GCT scores for 1972 and FCT/WK scores for 1976 by individual ratings and pay grade clusters. The analysis of these scores by ratings revealed that, of the 96 ratings which existed in both 1972 and 1976, the average GCT/WK score for 79 ratings at the end of FY 76 was equal to or better than the 1972 GCT score. With the exception of PI's, whose average score dropped from 66 to 61, none of the 17 ratings, which showed average scores for 1976 below their 1972 averages, fell off by more than one or two points.

Figure 7 shows that ratings vary greatly in average GCT/WK. At the end of FY 76, the average GCT/WK score ranged from a high of 65 for CTI's to a low of 44 for MS's, with the vast majority (67 ratings) ranging between 50-59. Only six ratings (BM, MS, SH, BR, ABH, and ASM) were below 50, while 28 ratings in six occupation groups had GCT/WK scores of 60 and above. These ratings and their occupation groups were: Deck

TABLE 50

Average GCT/WK Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating		E1-E3		E4-E6		E7-E9		Total	
		1972	1976	1972	1976	1972	1976	1972	1976
	BM	49	46	47	47	47	48	47	47
	MA	--	--	--	52	--	55	--	53
	QM	57	58	54	57	56	55	55	57
	SM	58	56	53	52	52	52	54	53
	OS	--	59	--	59	--	58	--	59
	EW	58	61	55	62	59	59	56	62
	ST	--	--	54	61	60	62	57	62
	STG	56	60	55	62	--	60	55	61
	STS	54	59	55	61	--	60	55	61
	OT	60	59	55	62	60	60	56	61
Deck		57	58	52	56	53	54	53	56
	TM	56	56	53	57	55	56	54	56
	GM	--	--	--	--	51	50	51	50
	GMM	53	56	51	57	49	51	51	56
	GMT	54	55	52	56	57	56	53	56
	GMG	55	55	48	51	47	47	48	52
	FT	--	--	--	--	63	63	63	63
	FTG	54	60	55	61	61	62	55	61
	FTM	56	60	55	62	62	64	55	62
	FTB	52	62	55	62	63	63	56	62
	MT	64	60	55	60	62	63	56	60
	MN	52	54	53	57	55	55	53	56
Ordnance		55	57	52	58	56	58	53	58
	ET	--	--	56	64	64	64	59	64
	ETN	56	62	55	63	--	--	55	63
	ETR	56	61	55	63	--	--	55	63
	DS	60	60	56	63	63	64	56	63
Electronics		56	61	55	63	64	64	56	63
	PI	--	--	--	--	66	61	66	61
	IM	54	57	54	56	58	57	55	56
	OM	56	56	53	58	60	58	55	58
Precision Equip.		55	56	54	57	59	58	55	57

TABLE 50 (cont'd)

Average GCT/WK Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
NC	--	--	--	54	--	55	--	55
RM	55	54	55	56	57	57	55	56
CTT	59	57	57	61	59	60	58	59
CTA	62	56	60	60	58	59	60	59
CTM	58	66	56	64	64	65	57	64
CTO	57	58	57	61	58	58	57	60
CTR	57	58	56	59	58	59	57	59
CTI	60	63	59	66	62	63	60	65
YN	59	56	55	54	56	55	56	54
LN	--	--	--	56	--	57	--	56
PN	58	60	54	57	54	54	55	57
DP	58	60	56	59	58	59	57	59
SK	55	55	51	50	50	50	51	51
DK	57	55	53	50	49	49	53	51
MS	--	52	--	41	--	45	--	44
CS	52	--	47	--	46	--	47	--
SD	--	--	--	--	--	--	--	--
SH	51	51	46	44	45	44	46	46
JO	59	63	58	63	62	62	59	63
PC	53	55	52	49	55	54	52	51
IS	--	60	--	59	--	60	--	60
Adm./Cler.	56	55	53	52	54	53	54	53
LI	55	51	50	51	53	55	50	51
DM	57	56	55	55	60	60	56	55
MU	56	59	56	59	60	60	57	59
SN	51	52	--	--	--	--	51	52
Miscellaneous	51	52	54	56	59	59	51	52
MM	55	54	53	60	53	56	53	58
EN	54	53	49	51	52	52	50	52
MR	53	54	51	53	55	55	52	53
BT	53	52	48	51	49	50	49	51
BR	--	--	47	49	49	50	48	49
EM	55	56	54	59	57	57	54	58
IC	55	57	55	60	59	59	55	59
HT	53	54	49	52	50	50	50	52

TABLE 50 (cont'd)

Average GCT/WK Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating		E1-E3		E4-E6		E7-E9		Total	
		1972	1976	1972	1976	1972	1976	1972	1976
	PM	52	56	52	51	54	53	52	53
	ML	52	53	50	52	52	52	51	52
	FN	51	49	--	--	--	--	51	49
Eng./Hull		52	51	51	56	53	54	52	54
	CU	--	--	--	--	60	58	60	58
	EA	56	59	55	54	58	60	56	57
	CE	53	55	52	54	57	56	53	55
	EQ	--	--	--	--	59	59	59	59
	EO	51	53	50	51	53	53	51	52
	CM	52	53	51	52	55	55	52	52
	BU	52	54	52	53	54	54	52	54
	SW	52	52	51	52	54	55	52	52
	UT	50	51	51	52	54	53	51	52
	CN	50	52	--	--	--	--	50	52
Construction		51	53	51	53	55	55	52	53
	AF	--	--	--	--	59	57	59	57
	AV	--	--	--	--	63	62	63	62
	AD	--	--	--	--	57	55	57	55
	ADR	52	55	50	54	55	55	51	54
	ADJ	53	54	50	52	53	53	51	53
	AT	55	60	56	61	62	62	56	61
	AX	56	60	57	62	61	63	57	61
	AW	58	61	56	61	61	62	57	61
	AO	52	51	51	53	54	54	51	53
	AQ	54	61	55	61	62	62	55	61
	AC	57	61	56	60	58	59	56	60
	AB	--	--	--	--	55	53	55	53
	ABE	54	53	50	51	49	51	51	52
	ABF	53	53	50	50	50	50	50	51
	ABH	52	53	49	47	50	49	50	49
	AE	53	55	52	56	57	58	53	56
	AM	--	--	--	--	56	54	56	54
	AMS	53	54	50	52	53	53	51	53
	AMH	53	53	50	52	53	53	51	52
	AME	53	54	50	55	53	53	51	54

TABLE 50 (cont'd)

Average GCT/WK Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

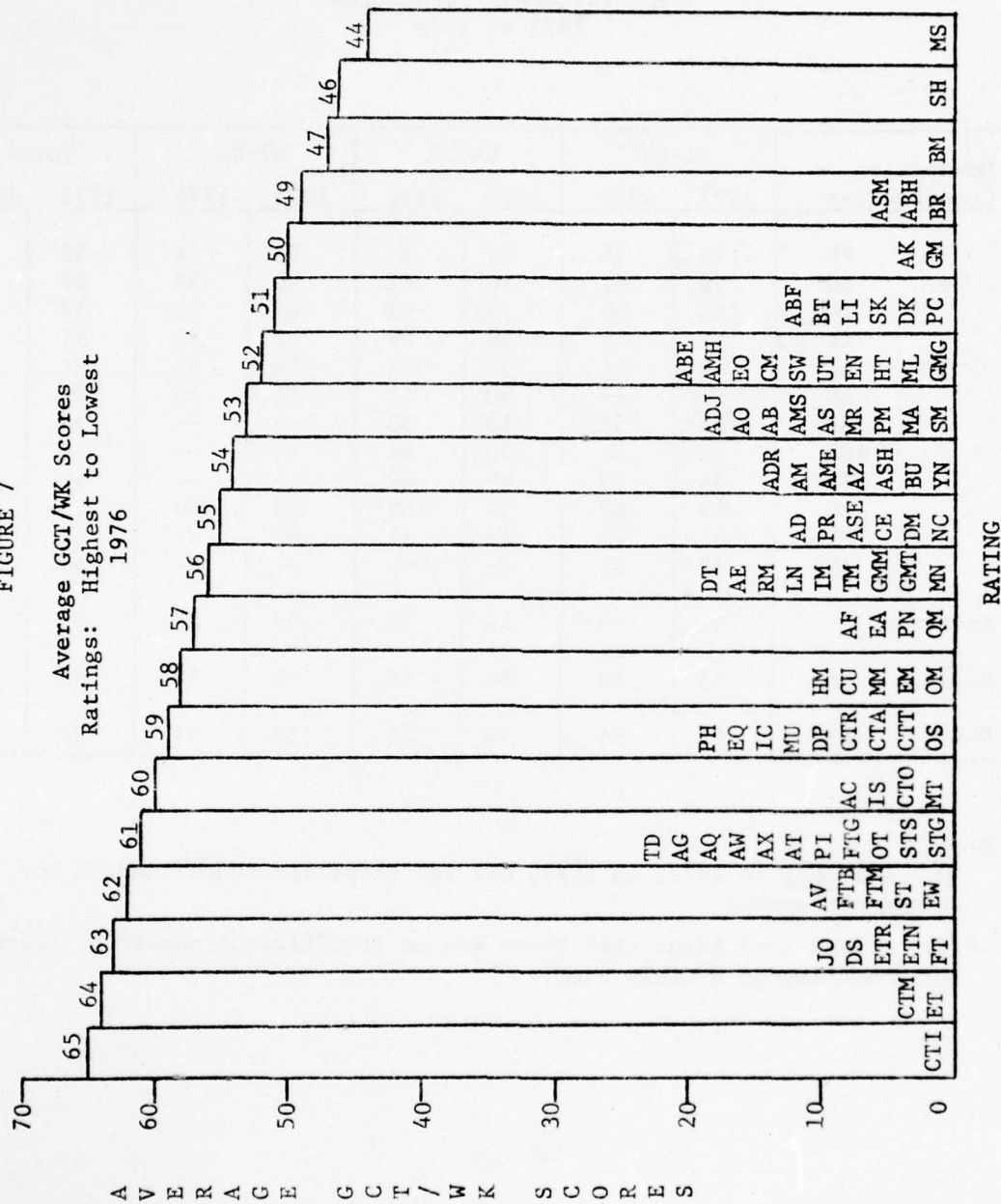
Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
PR	56	55	52	55	55	54	53	55
AG	58	62	56	61	60	59	57	61
TD	58	60	57	62	62	62	58	61
AK	55	55	50	49	52	53	51	50
AZ	56	56	54	53	56	55	54	54
AS	--	--	50	52	54	54	51	53
ASE	58	54	53	55	--	--	54	55
ASH	52	54	50	54	--	--	51	54
ASM	54	53	49	49	--	--	50	49
PH	56	60	54	59	59	60	55	59
PT	57	--	55	--	62	--	56	--
AN	48	51	--	--	--	--	48	51
Aviation	51	53	52	55	57	57	52	55
Medical HM	55	58	54	58	58	58	55	58
Dental DT	55	55	54	56	57	57	55	56

Notes:

(1) GCT only in 1972; in 1976, GCT for first six months and WK for second six months

(2) A dash (--) means that there was an insufficient number of scores for computing an average score.

FIGURE 7



(ST, STG, STS, OT, EW); Ordnance (MT, FT, FTG, FTM, FTB,); Electronics (ET, ETN, ETR, DS); Precision Equipment (PT); Adm./Clerical (CTO, CTM, CTI, JO, IS); and Aviation (AC, AT, AX, AW, AQ, AG, TD, AV). Showing the same relative position as with education level, those ratings with the highest GCT/WK scores tend to be well-represented by electrical/electronics specialties; those with average to below average GCT/WK scores, by mechanical specialties.

Table 51 contains average ARI and ARI/AR scores by ratings and pay grade clusters. While GCT/WK scores were for the most part improved or unchanged in 1976 as compared with GCT scores in 1972, a significant number of ratings (41 of 96) showed in 1976 decreased ARI/AR average scores as compared to their 1972 average ARI scores. Most of these decreases can be traced to a large number of decreases in ARI scores (some sizable) for pay grades E1-E3. Pay grade clusters E4-E6 and E7-E9 also experienced some reductions, but not as many and not as severely as E1-E3's. The number of ratings in which E1-E3's, E4-E6's, and E7-E9's dropped in average arithmetic aptitude score from 1972 to 1976 was 45, 30, and 15 respectively -- a clear pattern of increasing losses in scores from highest pay grades to lowest. Scores which fell five points or more were confined to E1-E3 pay grades (except E4-E6's in the cases of the ASE, ASH, and ASM ratings) as follows: GMM, GMT, MN, IM, OM, LI, MM, EN, MR, BT, UT, ADJ, ABE, ABF, ABH, AMS, AMH, AME, PR, ASE, ASH, and ASM.

The great majority of ratings which fell in arithmetic aptitude scores from 1972 to 1976 were from three occupation groups; Engineering & Hull, Construction, and Aviation. As a group, E1-E3's in every

TABLE 51

Average ARI/AR Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
BM	50	46	48	47	46	47	47	47
MA	--	--	--	50	--	52	--	51
QM	53	54	52	55	54	54	52	54
SM	50	53	49	50	50	50	49	51
OS	--	55	--	56	--	56	--	56
EW	57	58	57	60	58	59	57	60
ST	--	--	56	64	58	61	57	61
STG	55	57	56	59	--	58	56	59
STS	55	56	56	58	--	58	56	58
OT	56	54	55	58	58	59	56	57
Deck	53	54	52	54	52	53	52	54
TM	54	53	53	54	53	54	53	54
GM	--	--	--	--	49	48	49	48
GMM	58	52	56	54	48	51	55	53
GMT	56	51	55	54	55	54	55	53
GMC	55	51	49	49	45	47	49	49
FT	--	--	--	--	61	61	61	61
FTG	55	58	56	59	59	60	56	59
FTM	58	58	58	60	60	62	58	60
FTB	57	59	58	61	61	61	58	61
MT	52	60	58	58	61	63	58	59
MN	55	50	54	54	53	54	54	53
Ordnance	55	54	54	56	54	56	54	56
ET	--	--	61	63	62	62	61	63
ETN	57	59	58	61	--	--	58	61
ETR	57	59	57	62	--	--	57	61
DS	62	60	60	62	62	63	60	62
Electronics	57	59	58	62	62	62	59	62
PI	--	--	--	--	62	56	62	56
IM	58	51	56	54	52	54	56	53
OM	56	51	56	55	54	54	56	53
Precision Equip.	57	51	56	54	54	54	56	53

TABLE 51 (cont'd)

Average ARI/AR Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
NC	--	--	--	53	--	54	--	54
RM	51	51	53	54	55	56	53	53
CTT	54	53	55	58	56	58	55	56
CTA	53	51	53	57	56	58	54	55
CTM	59	58	60	61	62	63	61	62
CTO	53	54	54	57	56	57	54	56
CTR	51	54	54	58	55	57	54	56
CTI	52	59	56	61	59	61	55	61
YN	51	51	51	52	54	54	51	52
LN	--	--	--	54	--	54	--	54
PN	54	56	51	55	52	53	52	55
DP	55	57	54	58	57	58	55	58
SK	52	54	49	51	50	51	49	51
DK	51	56	49	53	51	52	49	53
MS	--	50	--	44	--	47	--	46
CS	51	--	47	--	46	--	47	--
SD	--	--	--	--	--	--	--	--
SH	50	51	45	45	45	46	46	47
JO	52	57	52	57	56	56	53	57
PC	48	52	49	49	53	53	49	50
IS	--	55	--	56	--	57	--	56
Adm./Cler.	52	52	51	51	53	53	51	52
LI	53	48	51	49	52	52	51	49
DM	57	53	55	53	60	59	56	54
MU	51	53	53	55	56	55	54	55
SN	49	51	--	--	--	--	49	51
Miscellaneous	49	51	53	53	56	55	49	51
MM	57	51	56	58	52	54	55	56
EN	55	50	52	50	51	51	52	50
MR	57	51	56	52	55	54	56	52
BT	54	48	51	50	48	50	52	49
BR	--	--	47	51	48	50	48	50
EM	56	53	56	57	55	57	56	56
IC	56	52	57	57	57	58	57	56
HT	55	54	53	50	49	50	53	50

TABLE 51 (cont'd)

Average ARI/AR Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
PM	56	52	53	52	49	51	53	52
ML	55	51	52	50	51	49	52	50
FN	52	48	--	--	--	--	52	48
Eng./Hull	53	49	55	55	52	53	54	52
CU	--	--	--	--	59	55	59	55
EA	58	58	56	57	60	61	57	58
CE	55	52	55	54	54	55	55	53
EQ	--	--	--	--	55	55	55	55
EO	52	50	51	50	51	52	52	50
CM	54	50	53	51	51	51	53	50
BU	53	51	52	52	51	53	53	52
SW	53	50	53	50	52	53	53	50
UT	53	48	51	51	52	51	52	50
CN	50	51	--	--	--	--	50	51
Construction	53	51	53	52	52	53	53	51
AF	--	--	--	--	57	55	57	55
AV	--	--	--	--	62	61	62	61
AD	--	--	--	--	55	54	55	54
ADR	54	51	52	52	53	53	53	52
ADJ	55	50	54	51	51	52	54	51
AT	55	58	58	59	60	61	58	59
AX	55	58	58	60	60	61	58	59
AW	57	57	58	58	59	60	58	58
AO	54	51	53	51	52	52	53	51
AQ	55	58	58	60	61	61	58	60
AC	56	56	55	57	57	57	56	57
AB	--	--	--	--	51	51	51	51
ABE	54	49	53	49	48	49	53	49
ABF	55	49	52	48	49	50	52	49
ABH	53	48	50	47	47	48	50	47
AE	55	53	56	54	56	57	56	54
AM	--	--	--	--	55	54	55	54
AMS	55	50	53	50	51	52	54	50
AMH	55	50	53	50	51	52	54	50
AME	55	50	54	52	50	52	54	51

TABLE 51 (cont'd)

Average ARI/AR Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating		E1-E3		E4-E6		E7-E9		Total	
		1972	1976	1972	1976	1972	1976	1972	1976
	PR	55	50	53	51	52	52	54	51
	AG	54	57	54	58	58	57	55	57
	TD	58	58	58	60	61	61	58	60
	AK	51	53	49	49	52	53	50	50
	AZ	52	53	52	52	55	56	52	53
	AS	--	--	49	52	53	53	51	52
	ASE	59	52	60	53	--	--	60	53
	ASH	58	49	57	52	--	--	57	51
	ASM	59	50	55	49	--	--	56	49
	PH	54	54	53	55	56	56	54	55
	PT	53	--	54	--	59	--	55	--
	AN	48	49	--	--	--	--	48	49
Aviation		51	51	54	54	55	55	53	53
Medical	HM	51	54	52	55	54	55	52	55
Dental	DT	50	51	52	53	53	55	51	52

Note:

- (1) ARI only in 1972; in 1976, ARI for first six months and AR for second six months.
- (2) A dash (--) means there was an insufficient number of scores for computing an average score.

Eng./Hull rating posted a lower ARI/AR score in 1976 than their ARI score in 1972. The same was true in six of the nine¹ Construction ratings, and in 14 of the 26 Aviation ratings which had E1-E3's in 72 and 76. The Aviation ratings were unique in also having a large number of ratings (13) in which arithmetic aptitude scores decrease for E4-E6 personnel from 1972 to 1976.

Table 52 contains average mechanical aptitude scores for ratings by pay grade clusters. Because of absence of scores for certain pay grades (especially E1-E3) among ratings, it was impossible to do a satisfactory analysis of ratings by pay grades. However, for total personnel (E1-E9), there were few significant changes in these scores from 1972 to 1976. The PI rating, which dropped from 65 to 57, was the only rating to change by as much as five points, up or down.

Mental Group Categories (Tables 53-57; Figure 8)

Percentages of personnel included in Mental Group I, II and Upper III ("School Eligibles") by occupation groups and ratings for the 1972-76 period are reported in Tables 53-57 and in Figure 8. Occupation group figures are divided into pay grade clusters: E1-E3, E4-E6, and E7-E9. Mental Groups I, II, and Upper III will be referred to as MG I, MG II, and MG UIII; for the total of these three mental group categories (i.e., "School Eligibles"), the acronym "SE" will be used.

Table 53 shows that the percent of SE enlisted personnel in 1972 as compared to 1976 did not have a consistent pattern across occupation groups. While the Deck, Ordnance, Electronics, Miscellaneous, Eng./Hull,

¹CN (apprenticeship) not included as a rating.

TABLE 52

Average MECH/MC Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
BM	47	47	46	47	48	48	47	48
MA	--	--	--	50	--	51	--	51
QM	50	51	--	51	51	51	50	51
SM	--	50	47	48	48	49	47	49
OS	--	51	--	51	--	52	--	51
EW	55	55	54	55	54	54	54	55
ST	--	--	54	50	55	57	55	57
STG	--	54	--	55	--	55	--	55
STS	--	55	--	56	--	56	--	56
OT	54	52	--	54	55	55	54	54
Deck	--	51	48	51	51	51	49	51
TM	52	52	51	53	55	54	52	53
GM	--	--	--	--	51	50	51	50
GMM	--	54	50	55	50	52	50	54
GMT	54	54	52	54	56	55	53	54
GMG	55	54	46	50	48	48	47	51
FT	--	--	--	--	59	59	59	59
FTG	--	54	--	56	57	56	--	55
FTM	--	54	--	56	58	58	--	56
FTB	--	53	--	57	60	58	57	57
MT	--	55	--	55	58	57	57	56
MN	--	54	55	55	56	54	55	54
Ordnance	--	54	51	54	55	55	52	54
ET	--	--	57	58	59	59	59	58
ETN	--	55	--	56	--	--	--	56
ETR	--	55	--	56	--	--	--	56
DS	--	54	--	56	--	59	--	56
Electronics	--	55	--	56	--	59	--	56
PI	--	--	--	--	65	57	65	57
IM	57	56	--	55	58	58	56	56
OM	--	56	--	57	58	58	57	57
Prec. Equip.	--	56	--	56	58	58	57	56

TABLE 52 (cont'd)

Average MECH/MC Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
NC	--	--	--	50	--	51	--	51
RM	--	48	50	49	52	51	50	49
CTT	--	49	--	52	--	52	52	51
CTA	--	47	--	49	50	49	49	48
CTM	59	66	--	54	59	59	59	58
CTO	--	49	--	50	--	51	--	50
CTR	--	49	--	51	51	52	--	50
CTI	--	51	--	52	51	50	--	51
YN	48	47	--	47	49	48	48	47
LN	--	--	--	48	--	48	--	48
PN	50	49	47	47	48	48	48	48
DP	52	50	--	51	53	54	52	51
SK	49	48	44	45	46	46	45	46
DK	--	48	44	44	44	43	45	44
MS	--	47	--	42	--	45	--	43
CS	--	--	45	--	46	--	45	--
SH	45	46	43	43	44	44	43	44
JO	--	50	49	49	50	51	50	50
PC	47	48	48	46	48	50	48	47
IS	--	53	--	52	--	52	--	52
Adm./Cler.	--	48	47	47	49	49	48	47
LI	52	50	--	50	50	51	50	50
DM	53	52	54	52	57	57	54	53
MU	--	53	49	49	52	51	50	50
SN	--	50	--	--	--	--	--	50
Miscellaneous	--	50	50	50	53	52	--	50
MM	--	55	--	56	56	56	55	56
EN	56	56	52	54	56	56	53	54
MR	59	56	56	55	58	58	57	56
BT	55	54	50	53	51	52	51	53
BR	--	--	50	53	52	51	52	52
EM	--	54	54	54	56	55	55	54
IC	56	54	56	55	57	57	56	55
HT	--	54	50	53	53	53	52	53
PM	--	57	--	52	58	56	55	54
ML	--	54	52	54	57	55	55	54

TABLE 52 (cont'd)

Average MECH/MC Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating	E1-E3		E4-E6		E7-E9		Total	
	1972	1976	1972	1976	1972	1976	1972	1976
FN	--	51	--	--	--	--	--	51
Eng./Hull	--	53	52	55	55	55	53	54
CU	--	--	--	--	59	58	59	58
EA	--	53	--	51	54	54	--	52
CE	55	55	--	55	57	57	55	55
EQ	--	--	--	--	59	58	59	58
EO	--	54	--	54	55	56	53	54
CM	57	55	--	56	57	57	56	56
BU	54	53	--	54	55	56	54	54
SW	--	52	--	54	56	57	55	54
UT	54	52	--	54	53	54	53	53
CN	--	53	--	--	--	--	--	53
Construction	--	54	--	54	56	56	54	54
AF	--	--	--	--	58	56	58	56
AV	--	--	--	--	59	58	59	58
AD	--	--	--	--	56	55	56	55
ADR	56	54	52	55	55	55	53	55
ADJ	56	55	53	54	54	55	54	54
AT	--	55	--	56	58	58	57	56
AX	--	55	57	58	58	58	57	56
AW	--	55	55	56	58	57	57	56
AO	55	51	51	52	53	53	52	52
AQ	--	55	--	56	58	58	--	56
AC	52	51	53	53	54	53	53	53
AB	--	--	--	--	52	52	52	52
ABE	54	53	50	52	49	51	51	52
ABF	54	54	49	50	50	50	50	52
ABH	--	53	48	49	50	49	49	50
AE	--	52	54	54	56	56	54	54
AM	--	--	--	--	55	54	55	54
AMS	56	54	51	53	53	53	53	53
AMH	--	54	52	53	54	54	53	53
AME	55	54	52	54	52	53	53	54
PR	55	54	53	54	53	54	54	54
AG	50	51	51	51	53	52	52	51

TABLE 52 (cont'd)

Average MECH/MC Scores by Occupation Groups and Ratings
For Pay Grade Categories
1972 v. 1976

Occupation Group/Rating		E1-E3		E4-E6		E7-E9		Total	
		1972	1976	1972	1976	1972	1976	1972	1976
	TD	--	53	58	56	59	60	58	56
	AK	48	47	46	45	48	48	47	46
	AZ	50	49	--	48	54	53	52	48
	AS	--	--	53	55	57	56	54	55
	ASE	57	54	--	54	--	--	--	54
	ASH	--	55	--	54	--	--	--	54
	ASM	58	55	--	52	--	--	--	53
	PH	--	53	53	54	56	56	54	54
	PT	50	--	--	--	55	--	53	--
	AN	--	50	--	--	--	--	--	50
Aviation		51	52	52	53	55	55	53	53
Medical	HM	--	50	--	50	51	51	50	50
Dental	DT	--	48	49	49	50	50	50	49

Notes:

(1) MECH only in 1972; in 1976, MECH for the first six months and MC for the second six months.

(2) A dash (--) means that there was an insufficient number of scores for computing an average score.

TABLE 53

Percent of Personnel in Mental Groups I, II, & Upper III
Occupation Groups (Total Personnel)
1972 to 1976

Occupation Group	1972			1973			1974			1975			1976		
	I	II	U/III SE	I	II	U/III SE	I	II	U/III SE	I	II	U/III SE	I	II	U/III SE
Deck	6	44	25 76	7	44	26 76	6	44	26 76	5	44	26 76	6	47	26 78
Ordnance	11	53	20 85	11	54	21 85	9	54	20 84	9	55	22 86	8	56	23 87
Electronics	26	63	8 98	25	64	10 98	23	64	10 97	22	66	10 98	21	68	10 98
Prec. Equip.	11	58	24 92	10	57	23 91	10	59	23 92	9	58	24 90	7	58	26 90
Adm./Cler.	6	43	26 76	5	39	26 71	4	35	26 65	4	33	28 65	4	33	29 66
Misc.	3	26	27 57	2	24	26 53	2	26	26 54	3	27	28 58	7	33	25 64
Eng./Hull	7	43	24 75	7	40	24 72	6	38	27 71	6	39	28 72	6	40	29 75
Constr.	5	40	27 72	4	39	28 71	4	39	30 73	3	40	32 76	3	40	32 75
Aviation	7	49	23 79	6	44	24 74	5	42	26 73	5	43	27 75	5	44	29 78
Medical	7	47	32 87	6	46	31 84	6	46	31 83	5	47	32 83	6	49	32 86
Dental	6	45	31 83	4	40	32 77	4	36	33 73	3	35	34 73	3	36	36 74

Notes:

- (1) SE = School Eligible (aggregate of Columns I, II & U/III)
- (2) Because of rounding down by the computer, a percentage could be as much as 0.9% higher than shown.

and Construction groups either increased or maintained the same shares of SE personnel over the 1972-76 period, the Precision Equipment, Adm./Clerical, Aviation, Medical, and Dental groups decreased in their percentages of SE personnel. The SE percentages for occupation groups fell substantially from 1972 to 1976 -- i.e., from 76% to 66% for the Adm./Clerical group, and from 83% to 74% for the Dental group. The Adm./Clerical and Dental losses were in MG's I and II; gains were actually made in MGVIII for both groups.

Tables 54-56 report the information for total enlisted personnel (discussed above) by pay grade clusters: E1-E3, E4-E6, and E7-E9. During the 1972-76 period, E7-E9 personnel tended to improve or maintain the same SE percent in every occupation group except Precision Equipment, Adm./Clerical, and Miscellaneous. No occupation group showed sharp gains or losses in either the MG I, II, and UIII percents themselves or in the total (SE) percent.

For E4-E6 personnel, the picture was somewhat different. SE percentages in the Precision Equipment, Adm./Clerical, Miscellaneous, Aviation, Medical, and Dental occupation groups all dropped over the period 1972 to 1976, while those of the remaining occupation groups gained or remained the same. Two SE decreases were rather severe (Adm./Clerical, 74% to 62%; Dental, 84% to 77%), while two others (Miscellaneous, 83% to 78%; Medical, 90% to 85%) were at least sizable. In all cases, the losses were in MGs I and, except for Precision Equipment, in MG II. Furthermore, unlike E7-E9's, E4-E6's experienced a loss in MG I percentages in every occupation group (except Eng./Hull, which remained

TABLE 54

Percent of Personnel in Mental Groups I, II, & Upper III
Occupation Groups (Pay Grades E1-E3)
1972 to 1976

Occupation Group	1972			1973			1974			1975			1976		
	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE
Deck	7	49	29 85	6	49	27 83	4	48	33 85	2	47	33 82	3	50	33 86
Ordnance	8	56	28 92	7	54	27 89	5	57	28 90	3	55	29 86	3	50	32 86
Electronics	16	62	17 96	16	62	17 96	12	63	22 97	10	71	17 98	12	69	16 97
Prec. Equip.	8	57	28 94	9	58	25 93	6	70	18 94	3	64	24 91	2	56	36 93
Adm./Cler.	5	45	32 82	3	34	29 67	2	29	30 61	1	28	34 63	2	30	37 69
Misc.	3	25	27 56	2	23	26 52	2	25	26 53	2	26	28 57	7	32	25 64
Eng./Hull	4	37	29 71	3	30	28 61	2	26	33 61	1	26	35 62	2	29	36 67
Constr.	3	38	29 71	4	39	29 71	2	39	34 75	1	40	37 79	2	38	37 76
Aviation	3	38	25 67	2	29	26 57	2	27	29 58	1	31	32 64	3	35	33 71
Medical	4	36	41 82	4	36	34 75	3	38	33 75	3	41	35 78	4	47	35 86
Dental	4	37	39 81	3	31	35 68	2	25	36 63	1	26	37 63	1	29	39 69

Notes:

- (1) SE = School Eligibles (aggregate of Columns I, II & UIII)
 (2) Because of rounding down by the computer, a percentage could be as much as 0.9% higher than shown.

TABLE 55

Percent of Personnel in Mental Groups I, II, & Upper III
Occupation Groups (Pay Grades E4-E6)
1972 to 1976

Occupation Group	1972			1973			1974			1975			1976		
	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE
Deck	7	44	26 76	6	42	26 75	6	42	26 74	6	43	25 74	6	46	24 77
Ordnance	11	54	18 84	11	55	20 85	10	54	20 84	9	56	21 86	9	59	21 88
Electronics	27	63	8 98	25	64	10 98	23	64	10 97	21	66	10 98	20	68	10 98
Prec. Equip.	10	58	22 90	10	57	23 91	11	56	24 91	10	56	24 90	8	59	22 88
Adm./Cler.	7	42	25 74	6	38	25 70	5	35	25 65	4	34	26 64	4	32	26 62
Misc.	9	51	22 83	9	52	24 86	8	50	25 83	7	48	25 81	7	44	27 78
Eng./Hull	10	47	21 78	11	47	21 80	11	48	21 80	10	49	22 81	10	49	23 81
Constr.	5	40	25 70	4	37	27 69	5	39	27 71	5	39	28 71	4	40	28 72
Aviation	8	54	21 84	7	52	23 83	7	50	24 81	7	49	25 81	6	48	26 81
Medical	8	52	29 90	7	49	32 88	7	49	31 87	6	48	31 85	6	48	31 85
Dental	6	49	28 84	5	45	32 83	5	42	33 80	4	39	34 77	4	39	34 77

Notes:

- (1) SE = School Eligibles (aggregate of Columns I, II & UIII)
- (2) Because of rounding down by the computer, a percentage could be as much as 0.9% higher than shown.

TABLE 56

Percent of Personnel in Mental Groups I, II, & Upper III
Occupation Groups (Pay Grades E7-E9)
1972 to 1976

Occupation Group	1972			1973			1974			1975			1976		
	I	II	SE	I	II	SE	I	II	SE	I	II	SE	I	II	SE
Deck	6	42	22 71	6	43	22 72	6	44	22 73	7	45	23 75	7	44	24 75
Ordnance	12	49	19 80	11	49	19 80	12	50	17 80	14	51	18 83	15	52	18 85
Electronics	31	63	4 99	31	63	4 99	31	63	4 99	32	63	5 100	32	62	6 100
Prec. Equip.	14	57	22 94	15	55	22 93	14	55	25 95	14	56	23 93	11	57	22 91
Adm./Cler.	6	45	24 76	6	46	25 77	5	42	24 72	5	42	25 72	5	42	26 73
Misc.	19	54	17 91	20	55	17 93	17	56	15 89	17	57	15 90	17	58	16 90
Eng./Hull	3	41	28 73	4	41	28 74	4	41	28 73	4	42	28 74	6	43	28 77
Constr.	6	47	27 81	6	48	28 83	7	46	29 82	7	45	28 81	7	45	29 81
Aviation	10	54	21 86	10	54	21 85	10	53	21 85	10	53	21 85	10	54	22 86
Medical	9	59	22 90	8	60	22 91	9	59	23 91	9	59	22 90	8	59	22 90
Dental	8	53	20 82	8	56	22 87	7	57	21 86	6	57	21 84	8	57	20 86

Notes:

- (1) SE - School Eligibles (aggregate of Columns I, II & UIII)
- (2) Because of rounding down by the computer, a percentage could be as much as 0.9% higher than shown.

the same).

E1-E3 personnel exhibited the sharpest changes in SE percent from 1972 to 1976. Increases occurred in the Deck, Electronics, Miscellaneous, Construction, Aviation, and Medical occupation groups; decreases, in Ordnance, Precision Equipment, Adm./Clerical, Eng./Hull, and Dental. Healthy SE percent increases occurred for the Miscellaneous (56% to 64%), Construction (71% to 76%), Aviation (67% to 71%) and Medical (82% to 86%) occupation groups, while fairly substantial decreases occurred for the Ordnance (92% to 86%), Adm./Clerical (82% to 69%), Eng./Hull (71% to 67%), and Dental (81% to 69%) occupation groups. Increases for the Construction and Aviation occupation groups were exclusively in MG UIII; for Miscellaneous, in MGs I and II; and for Medical in MG II. All four occupation groups whose SE percentages dropped experienced the losses in MGs I and II; and MG II personnel in the E1-E3 cluster of the Adm./Clerical occupation group decreased from 45% to 30% in its percent of MG II.

The analysis by pay grade levels showed that at the end of FY 76 there was a general tendency for SE percentages to be higher with increasing pay grades for most occupation groups. The E7-E9 cluster had a higher SE percentage than that of E4-E6's in seven of eleven occupation groups, and the SE percentages for E4-E6's were higher than those of the E1-E3's in six of eleven occupation groups. The decline in SE percentages, in going from the E7-E9 cluster to the E1-E3 cluster, is illustrated by the fraction of SE percentages which are less than 70% for a pay grade cluster. Specifically, at the end of FY 76, there was none for E7-E9's;

FIGURE 8

Percent of Personnel Who Are School Eligibles (MGs I, II, UIII)
 Ratings: Highest to Lowest
 1976

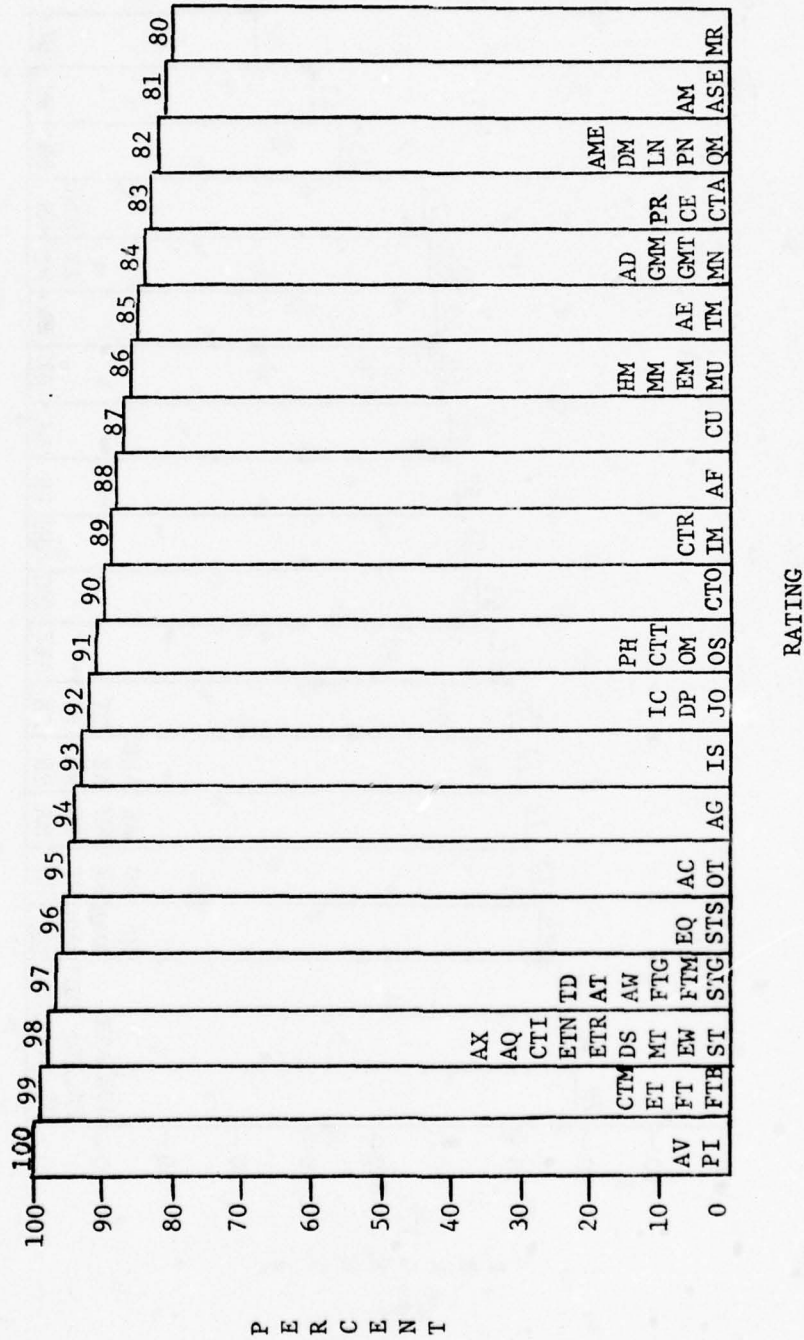
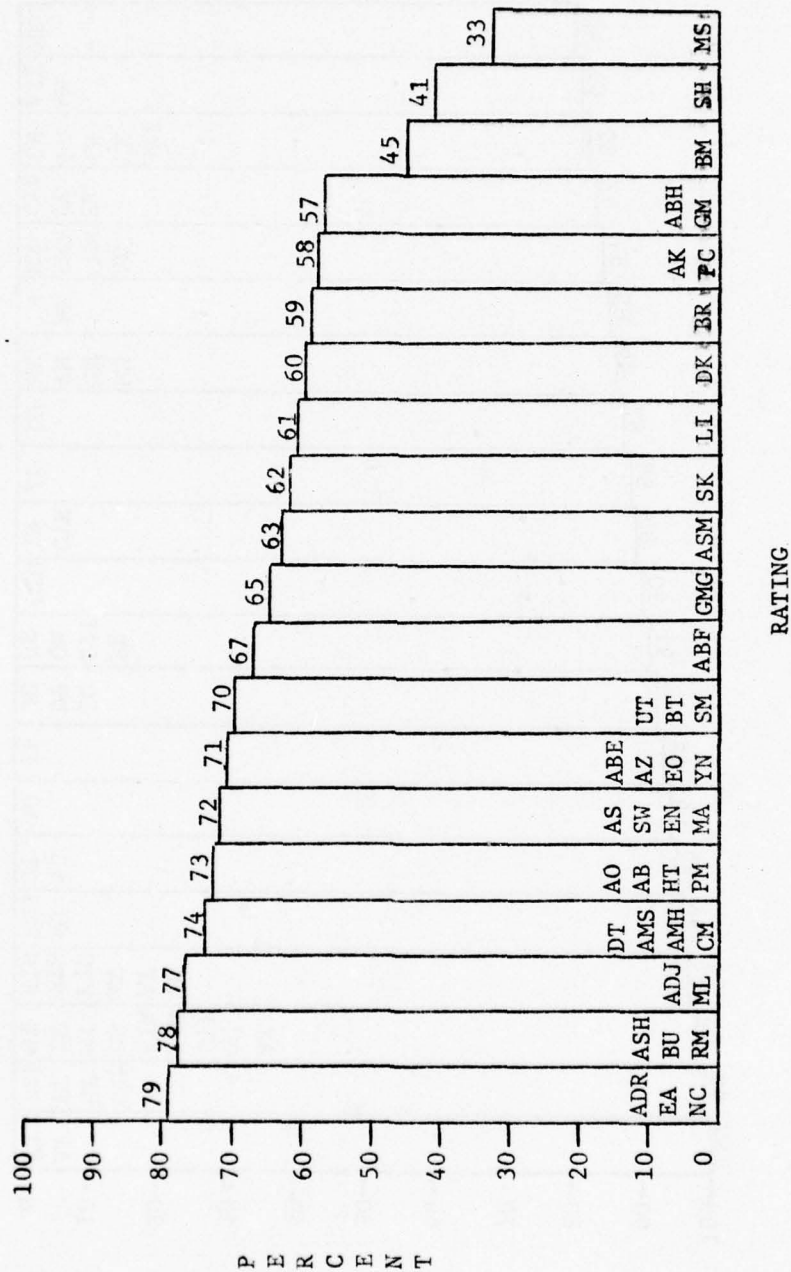


FIGURE 8 (cont'd)

Percent of Personnel Who Are School Eligibles (MGs I, II, UIII)
 Ratings: Highest to Lowest
 1976



one for E4-E6's (62% in the Adm./Clerical occupation group); and four for E1-E3's (in the Adm./Clerical (69%), Miscellaneous (64%), Eng./Hull (67%), and Dental (69%) occupation groups).

At the end of FY 76, total enlisted personnel (E1-E-9) varied in SE percentage from a high of 98% for the Electronics group to a low of 64% for the Miscellaneous group. The rank order by SE percent for total personnel by occupation groups is shown below. Also shown is whether each percentage is fairly consistent or fluctuates with respect to pay grade within each occupation group.

<u>Occupation Group</u>	<u>Percent of School Eligibles</u>	<u>Variation by Pay Grades</u>
Electronics	98	Consistent
Precision Equipment	90	Consistent
Ordnance	87	Consistent
Medical	86	Consistent
Deck	78	Highest in E1-E3 Lowest in E7-E9
Aviation	78	Highest in E7-E9 Lowest in E1-E3
Engineering/Hull	75	Highest in E4-E6 Lowest in E1-E3
Construction	75	Highest in E7-E9 Lowest in E4-E6
Dental	74	Highest in E7-E9 Lowest in E1-E3
Adm./Clerical	66	Highest in E7-E9 Lowest in E4-E6
Miscellaneous	64	Highest in E7-E9 Lowest in E1-E3

Mental group information by ratings is contained in Table 57 and summarized in Figure 8. Table 57 lists the percent of personnel in MGs I, II, and UIII, as well as SE totals, for the years 1972-76, and Figure 8 shows graphically the SE percentages by rating, from highest to lowest,

TABLE 57

Percent of Personnel in Mental Groups I, II, Upper III
Occupation Groups and Ratings
1972 to 1976

Occupation Group/Rating	1972				1973				1974				1975				1976			
	I	II	UIII	SE	I	II	UIII	SE	I	II	UIII	SE	I	II	UIII	SE	I	II	UIII	SE
BM	1	19	30	51	1	18	29	48	1	18	29	47	1	17	28	46	1	17	27	45
MA	--	--	--	--	--	--	--	--	5	38	27	69	5	40	28	72	4	42	26	72
QM	7	47	28	83	7	44	31	81	6	46	30	81	5	46	30	81	6	46	31	82
SM	3	34	31	69	3	30	33	66	2	30	34	64	2	29	35	66	2	32	36	70
OS	--	--	--	--	7	56	27	90	6	53	31	90	4	53	31	89	4	57	30	91
EW	13	67	18	97	16	65	17	97	16	67	15	98	15	68	15	98	14	69	15	98
ST	13	70	15	98	13	70	15	98	14	69	15	98	18	70	11	98	19	69	10	98
STG	13	68	15	97	14	68	15	97	13	70	15	97	11	71	15	97	11	69	17	97
STS	15	67	15	97	13	65	17	96	12	67	17	95	11	69	16	96	10	69	17	96
OT	16	63	19	97	15	65	18	98	15	67	16	97	12	67	18	96	9	64	22	95
Deck	6	44	25	76	7	44	26	76	6	44	26	76	5	44	26	76	6	47	26	78
TM	5	53	27	86	5	52	28	85	4	52	29	84	4	52	30	85	3	51	31	85
GM	4	32	34	69	3	29	35	68	3	25	41	69	3	20	37	60	3	23	30	57
GM	10	52	22	84	10	51	22	83	8	50	23	81	7	50	27	83	5	49	30	84
GMT	10	53	24	86	8	51	26	85	7	50	27	85	6	49	28	83	5	46	33	84
GMG	3	29	28	59	2	29	27	58	2	28	28	58	2	30	28	60	2	33	31	65
FT	28	66	6	99	29	65	4	99	29	66	4	100	27	68	4	99	28	65	6	99
FTG	16	66	15	97	15	66	16	97	15	67	16	97	12	69	16	97	11	69	16	97
FTM	22	68	9	99	21	68	10	98	19	69	10	98	17	69	12	98	15	68	14	97
FTB	20	69	10	98	19	69	10	98	17	71	10	99	17	71	11	98	18	71	11	99
MT	17	71	11	98	15	71	12	98	15	71	12	98	13	72	13	98	10	72	15	98
MN	7	55	27	90	7	51	30	88	5	54	31	89	4	49	31	85	4	46	34	84
Ordnance	11	53	20	85	11	54	21	85	9	54	20	84	9	55	22	86	8	56	23	87

Note: SE - School Eligibles (aggregate of Columns I, II and UIII). Because of rounding off, the sum of I, II & UIII might be slightly different than SE.

TABLE 57 (cont'd)

Percent of Personnel in Mental Groups I, II, Upper III
Occupation Groups and Ratings
1972 to 1976

Occupation Group/Rating	1972			1973			1974			1975			1976		
	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE
ET	35	59	5 99	34	61	5 99	34	61	5 99	33	61	5 99	31	62	6 99
ETN	23	65	10 98	21	65	12 98	19	66	13 97	17	68	13 98	16	70	13 98
ETR	23	65	10 98	22	65	11 98	20	66	12 98	18	69	11 98	18	70	10 98
DS	36	60	4 100	33	61	6 100	29	63	8 99	24	66	9 99	21	67	10 98
Electronics	26	63	8 98	25	64	10 98	23	64	10 97	22	66	10 98	21	68	10 98
PI	38	63	-- 100	1	1	1 --	50	33	17 1	38	50	13 100	21	57	21 100
IM	10	57	25 91	11	56	25 91	10	57	24 91	8	56	25 90	7	55	27 89
OM	11	60	23 94	10	60	23 93	10	61	21 93	8	60	22 91	6	61	24 91
Prec. Equip.	11	58	24 92	10	57	23 91	10	59	23 92	9	58	24 90	7	58	26 90
NC	--	--	--	--	--	--	5	44	28 77	4	45	28 78	5	46	28 79
RM	6	52	30 87	5	49	32 85	4	46	33 83	4	43	34 80	3	40	35 78
CTT	15	63	18 96	14	62	19 95	13	62	21 95	10	58	25 93	8	54	29 91
CTA	12	60	21 92	9	61	22 92	9	58	24 90	7	56	25 88	6	50	27 83
CTM	37	59	4 100	35	59	5 100	34	61	5 99	29	63	7 99	25	64	10 99
CTO	10	60	23 93	99	60	24 93	9	59	26 93	8	56	28 91	6	52	31 90
CTR	10	58	25 93	9	58	26 93	9	58	27 93	7	57	28 92	6	52	31 89
CTI	26	61	11 98	25	62	12 99	27	60	12 98	26	60	11 97	23	61	14 98
YN	6	45	31 81	5	42	33 79	4	40	33 77	4	38	34 75	3	35	33 71
LN	--	--	--	7	52	29 88	4	54	26 84	5	52	25 81	4	52	27 82
PN	6	47	28 81	5	47	30 82	5	45	31 81	4	45	33 81	4	45	33 82
DP	11	59	23 93	11	58	23 92	9	57	24 92	9	58	25 91	8	59	25 92
SK	4	34	26 64	3	33	30 66	2	27	30 59	2	26	32 59	2	26	35 62
DK	4	31	24 59	4	34	25 63	3	27	27 57	3	28	29 59	2	27	31 60

TABLE 57 (cont'd)

Percent of Personnel in Mental Groups I, II, Upper III
Occupation Groups and Ratings
1972 to 1976

Occupation Group/Rating	1972				1973				1974				1975				1976			
	I	II	UIII	SE	I	II	UIII	SE	I	II	UIII	SE	I	II	UIII	SE	I	II	UIII	SE
MS	--	--	--	--	--	--	--	--	--	--	--	--	*	10	19	29	1	11	21	33
CS	1	23	26	49	1	21	27	49	1	18	27	45	--	--	--	--	--	--	--	--
SD	--	--	--	--	*	4	11	16	*	3	10	13	--	--	--	--	--	--	--	--
SH	1	15	26	41	1	11	26	37	*	10	23	33	*	12	25	37	*	13	28	41
JO	19	55	18	92	18	57	19	93	15	56	20	91	12	59	20	90	11	60	21	92
PC	2	31	34	67	2	25	36	63	2	23	32	57	2	24	31	56	1	28	29	58
IS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	55	30	93
Adm./Cler.	6	43	26	76	5	39	26	71	4	35	26	65	4	33	28	65	4	33	29	66
LI	3	38	35	76	2	37	36	75	3	33	35	71	2	32	34	68	1	28	31	61
DM	10	56	22	89	7	55	27	89	5	54	26	86	6	49	28	84	5	46	31	82
MU	14	55	19	88	14	55	19	88	12	53	20	86	12	54	20	86	13	52	21	86
SN	3	26	27	56	2	24	26	52	2	25	26	53	2	26	28	57	7	32	25	64
Misc.	3	26	27	57	2	24	26	53	2	26	26	54	3	27	28	58	7	33	25	64
MM	15	53	19	86	15	54	18	87	15	55	19	88	13	54	20	87	12	53	21	86
EN	4	37	29	70	4	38	30	71	3	38	30	71	3	38	31	72	2	36	34	72
MR	8	51	25	84	8	49	27	84	7	49	26	81	5	49	27	80	4	45	30	80
BT	3	37	30	70	2	34	32	68	2	30	37	69	1	29	40	70	1	28	41	70
BR	1	20	33	54	1	22	34	57	1	19	31	51	2	23	28	52	2	25	31	59
EM	12	57	19	88	13	58	19	90	11	55	21	87	11	55	21	86	9	54	23	86
IC	15	64	16	95	13	62	18	94	11	59	22	93	10	60	23	92	10	59	23	92
HT	3	40	28	71	3	37	30	71	2	36	35	72	2	34	37	72	1	34	37	73
PM	5	50	24	79	3	52	23	78	4	51	20	74	3	51	21	75	4	47	22	73

TABLE 57 (cont'd)

Percent of Personnel in Mental Groups I, II, Upper III
Occupation Groups and Ratings
1972 to 1976

Occupation Group/Rating	1972				1973				1974				1975				1976			
	I	II	UIII	SE	I	II	UIII	SE	I	II	UIII	SE	I	II	UIII	SE	I	II	UIII	SE
ML	6	41	30	78	2	43	31	75	3	41	34	78	3	38	40	81	2	36	39	77
FN	4	28	31	63	2	21	28	50	1	14	29	44	1	13	30	43	1	20	32	54
Eng./Hull	7	43	24	75	7	40	24	72	6	38	27	71	6	39	28	72	6	40	29	75
CU	15	79	--	94	15	78	4	96	12	79	3	94	15	70	9	94	16	53	18	87
EA	22	54	14	90	20	53	16	88	14	48	20	82	14	46	20	80	11	44	24	79
CE	7	53	24	84	6	50	26	83	6	50	26	83	5	50	27	83	4	48	30	83
EQ	11	64	21	96	12	65	23	100	14	61	21	96	13	63	20	97	12	62	23	96
EO	3	37	27	68	4	37	29	69	3	39	30	73	3	40	30	73	3	38	31	71
CM	5	40	28	74	5	42	29	76	5	42	30	76	4	42	30	76	3	39	31	74
BU	4	45	27	77	4	45	29	78	4	44	30	78	3	43	33	79	3	41	34	78
SW	3	41	29	73	4	39	30	73	3	41	31	75	2	39	34	75	2	40	30	72
UT	4	35	33	72	4	37	32	73	3	36	34	72	2	36	34	72	2	33	35	70
CN	3	24	27	53	2	27	27	56	1	24	35	60	1	25	41	67	4	35	27	66
Construction	5	40	27	72	4	39	28	71	4	39	30	73	3	40	32	76	3	40	32	75
AF	16	57	21	94	15	57	22	94	13	57	24	94	10	54	26	91	9	55	25	88
AV	27	66	7	100	26	66	7	99	23	68	9	99	23	65	10	99	24	65	11	100
AD	8	57	26	91	8	57	25	90	7	54	26	87	7	53	26	86	6	53	25	84
ADR	4	47	27	77	3	42	29	74	3	42	29	74	3	43	30	76	3	42	34	79
ADJ	4	50	28	81	3	46	30	79	3	44	30	77	3	42	32	77	2	41	34	77
AT	17	69	12	98	17	68	13	98	16	68	13	97	15	68	14	97	14	68	15	97
AX	14	71	13	99	14	70	14	98	15	70	14	98	14	69	15	98	14	68	16	98
AW	19	70	10	98	16	68	12	97	14	67	16	97	12	68	17	97	11	71	16	97
AO	5	54	26	84	3	47	29	80	3	42	33	78	2	39	35	76	2	35	36	73
AQ	19	67	13	98	18	66	14	98	17	66	15	98	16	67	15	98	15	67	15	98

TABLE 57 (cont'd)

Percent of Personnel in Mental Groups I, II, Upper III
Occupation Groups and Ratings
1972 to 1976

Occupation Group/Rating	1972			1973			1974			1975			1976		
	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE	I	II	UIII SE
AC	12	66	18 96	10	64	20 95	9	63	22 94	8	62	24 94	8	65	22 95
AB	8	44	31 82	6	46	32 84	5	38	37 80	5	35	36 77	4	36	33 73
ABE	3	49	29 81	2	43	31 77	2	35	37 74	1	31	39 71	1	31	39 71
ABF	3	42	31 76	2	38	30 70	2	30	35 66	1	28	38 67	1	28	37 67
ABH	3	35	30 68	2	32	30 64	1	24	32 57	1	23	34 58	1	22	34 57
AE	6	61	23 91	6	58	25 89	5	57	27 88	4	55	28 87	4	52	30 85
AM	5	53	29 87	4	52	30 86	3	49	31 83	3	49	29 82	2	49	30 81
AMS	4	49	27 80	3	45	28 76	3	42	29 75	3	40	32 74	2	38	34 74
AMH	4	50	26 80	3	47	28 77	3	42	31 75	2	38	33 73	2	36	37 74
AME	4	55	26 84	3	51	27 82	3	48	31 82	2	44	36 82	2	41	39 82
PR	5	54	28 87	5	51	29 85	4	47	34 84	3	43	37 84	3	42	38 83
AG	11	63	21 95	10	62	21 94	10	62	22 93	9	63	21 92	8	65	20 94
TD	24	64	10 98	21	65	11 97	20	65	12 97	19	65	13 97	16	65	16 97
AK	3	38	26 67	2	35	29 67	2	28	29 59	1	27	29 57	1	26	31 58
AZ	5	50	29 85	5	46	30 80	4	41	30 75	3	36	32 71	3	35	34 71
AS	3	35	30 67	2	36	28 67	4	36	28 68	3	36	30 70	5	38	29 72
ASE	30	58	9 96	22	59	14 95	14	55	21 89	9	52	24 84	6	48	28 81
ASH	14	62	13 89	11	59	17 87	9	53	20 81	8	48	22 79	5	43	31 78
ASM	10	49	22 80	2	45	23 76	5	36	27 68	3	33	27 63	2	31	29 63
PH	11	58	20 89	12	57	21 89	11	57	23 91	10	57	23 90	10	58	24 91
PT	15	62	19 97	14	62	20 96	11	57	25 93	9	55	27 91	--	--	--
AN	2	19	26 47	1	17	24 43	1	14	25 40	1	17	27 45	3	27	30 60
Aviation	7	49	23 79	6	44	24 74	5	42	26 73	5	43	27 75	5	44	29 78
Med. HM	7	47	32 87	6	46	31 84	6	46	31 83	5	47	32 83	6	49	32 86
Dent. DT	6	45	31 83	4	40	32 77	4	36	33 73	3	35	34 73	3	36	36 74

*Less than 0.05%

for FY 76.

Between 1972 and 1976, the SE percentages dropped for almost two-thirds of the ratings¹ (63 of 96). Although in most cases the drop in SE percentage was only a few points (1 to 4), in 29 ratings it was 5 points or greater. Sixteen of the ratings which experienced SE percentage losses were from the Aviation occupation group, and five were from the Adm./Clerical occupation group. The ratings whose SE percentages dropped 5% or more between 1972 and 1976 are listed with their losses as follows:

<u>Occupation Group</u>	<u>Rating (Loss in SE percentage)</u>
Deck	BM (6)
Ordnance	GM (12), MN (6)
Adm./Clerical	RM (9), CTT (5), CTA (9), YN (10), PC(9)
Miscellaneous	LI (15), DM (7)
Construction	CU (7), EA (11)
Aviation	AF (6), AD (7), AO (11), AB (9), ABE(10), ABF (9), ABH (11), AE (6), AM (6), AMS (6), AMH (6), AK (9), AZ (14), ASE (15), ASH (11), ASM (17)
Dental	DT (10)

On the other hand, of the 33 ratings which improved upon or remained the same in SE percent at the end of FY 76 as compared to FY 72, only three showed as great an increase as 5% in fraction of personnel who were SE. These were GMG (59% to 65%), BR (54% to 59%), and AS (67% to 72%).

The most prominent change in mental group distribution by ratings during the 1972-76 period was the number of ratings which decreased in MG I and MG II percentages. Eighty-four of 96 ratings for which figures exist in both 1972 and 1976 dropped in percentage of personnel in MG I;

¹The SN, FN, CN, and AN apprenticeships are not included in these counts.

67 ratings dropped in MG II. The number of ratings in each occupation group to decrease in percentages of MGs I and II from 1972 to 1976 is reported below:

<u>Occupation Group (No. of Ratings Examined)</u>	<u>No. of Ratings which decreased in percentage</u>	
	<u>MG I</u>	<u>MG II</u>
Deck (8)	5	3
Ordnance (11)	10	6
Electronics (4)	4	0
Precision Equipment (3)	3	2
Administrative/Clerical (15)	15	11
Miscellaneous	3	3
Engineering/Hull (10)	8	8
Construction	6	8
Aviation (30)	28	24
Medical (1)	1	0
Dental (1)	1	1
TOTAL (96)	84	66

At the end of FY 76, the SE percentages among the ratings ranged from a high of 100% (PI's and AV's) to a low of 33% (MS's). The great majority of ratings (87 of 101) were manned by 70% or more of SE personnel. The ratings which fell below 70% were: BM (45%), GMG (65%), SK (62%), DK (60%), PC (58%), SH (41%), MS (33%), LI (61%), BR (59%), ABF (67%), ASM (63%), AK (58%), and ABH (57%).

Better than half of the ratings (52 of 101) fell between 70% and 89% inclusive for SE personnel at the end of FY 76. Thirty-five ratings, almost exclusively from electrical/electronic specialties, were in the 90% and above category. By occupation groups, they were:

<u>Occupation Group</u>	<u>Ratings (%)</u>
Deck	EW (98), ST (98), STG (97), STS (96), OT (95), OS (91)
Ordnance	FT (99), FTB (99), MT (98), FTG (97), FTM (97)
Electronics	DT (99), ETN (98), ETR (98), DS (98)
Precision Equipment	PI (100), OM (91)
Adm./Clerical	CTM (99), CTI (98), IS (93), DP (92), JO (92), CTT (91), CTO (90)
Miscellaneous	None
Engineering/Hull	IC (92)
Construction	EQ (96)
Aviation	AV (100), AX (98), AQ (98), AT (97), TD (97), AW (97), AC (95), AG (94), PH (91)
Medical	None
Dental	None

Enlistments (Tables 58-62)

Enlistment data were examined in order to determine whether there was growth in the number of personnel who made the Navy a career. Additionally, it seemed important to determine whether those enlisted personnel with the highest mental potential tended to be retained in the Naval Service. With this in mind, Navy reenlistment trends and the reenlistment mental profile were of major concern.

Table 58 lists the percent of personnel by occupation groups in their first, second, and third (or greater) enlistment in the Navy for the years 1972 to 1976. Presumably, it would be desirable to have the percent of second and third (+) enlistments rise with time, or at least remain constant, if such reenlistment data are to be indicative of a positive career pattern for personnel in the Naval Service.

In this regard, nine of eleven occupation groups increased fractions

TABLE 58

Percent in First, Second, Third (+) Enlistments
Occupation Groups
1972 to 1976

Occupation Group	1st Enlistment					2nd Enlistment					3rd + Enlistment				
	72	73	74	75	76	72	73	74	75	76	72	73	74	75	76
Deck	53	47	45	45	44	14	16	16	17	20	33	37	39	38	36
Ordnance	54	49	45	45	51	16	18	20	21	20	30	33	35	34	29
Electronics	61	60	57	56	57	23	22	23	23	21	16	18	20	21	22
Prec. Equipment	61	57	53	48	44	10	13	15	21	25	29	30	32	31	31
Adm./Clerical	53	47	41	41	42	14	16	20	20	21	33	37	39	39	37
Miscellaneous	98	97	96	95	96	1	1	1	2	2	1	2	3	3	2
Eng./Hull	65	65	66	65	64	11	11	12	14	16	24	24	22	21	20
Construction	58	58	62	61	57	17	17	16	16	15	25	25	22	23	28
Aviation	62	58	58	56	55	11	12	14	17	19	27	30	28	27	26
Medical	67	64	62	62	62	9	13	15	16	17	24	23	23	22	21
Dental	65	69	69	68	65	9	9	11	13	14	26	22	20	19	21

of their total personnel who were in their second enlistment between 1972 and 1976. These groups (excluding the Miscellaneous group, the great majority of which are Seamen at the E3 or lower pay grade) increased their second enlistment fractions by 4% (Ordnance) to 15% (Precision Equipment). Only the Electronics and Construction occupation groups decreased their fractions of second enlistment personnel, both by 2 percentage points.

Fractions of total personnel in their third (+) enlistments increased between 1972 and 1976 in six of the eleven occupation groups. These were: Deck (+3%), Electronics (+6%), Precision Equipment (+2%), Adm/Clerical (+4%), Miscellaneous (+1%), and Construction (+3%). Those occupation groups in which the fraction of third (+) enlistment personnel decreased were: Ordnance (-1%), Eng./Hull (-4%), Aviation (-1%), Medical (-3%), and Dental (-5%). At the end of FY 76, the occupation groups with the highest to lowest percentages of personnel in their second or third (+) enlistments were:

<u>Occupation Group</u> ¹	<u>2nd Enl.</u>	<u>3rd Enl. (+)</u>	<u>Total</u>
Adm./Clerical	21%	37%	58%
Deck	20%	36%	56%
Precision Equipment	25%	31%	56%
Ordnance	20%	29%	49%
Aviation	19%	26%	45%
Electronics	21%	22%	43%
Construction	15%	28%	43%
Medical	17%	21%	38%
Engineering/Hull	16%	20%	36%
Dental	14%	21%	35%

Notice that in only three occupation groups at least half of the

¹The "Miscellaneous" occupation group is excluded, since it is composed mainly of apprentices (Seaman). It is thus by design skewed toward 1st enlistment personnel.

personnel were beyond their first enlistment. Furthermore, in seven occupation groups only 20% to 30% of the personnel were in their third enlistment or more.

Table 59 shows that from 1972 to 1976 there were few ratings which failed to increase the percent of total personnel who were in their second enlistment. Only 12 ratings (EW, ST, GM, FTM, ET, DS, CTT, CTM, EN, EQ, EO, and SW) did not gain in this respect.

By contrast, 42 ratings declined over the period 1972 to 1976 in the percent of personnel in their third enlistment or longer. Of particular note is the fact that all 10 ratings in the Eng./Hull occupation group, as well as 17 ratings from the Aviation occupation group, decreased in their percentages of third (+) enlistment personnel. Losses for a few ratings were rather substantial: SH (-14%), BT (-11%), ML (-10%), AX (-10%), and ABF (-11%). Those total ratings which experienced some losses between 1972 and 1976 in percent of personnel in their third (+) enlistment were:

<u>Occupation Group</u>	<u>Rating</u>
Deck	EW
Ordnance	GMM, GMG, FTB, MT, MN
Electronics	None
Precision Equipment	None
Adm./Clerical	PN, SK, DK, SH, JO
Miscellaneous	None
Engineering/Hull	MM, EN, MR, BT, BR, EM, IC, HT, PM, ML
Construction	CU, UT
Aviation	AF, AX, AW, AO, AC, ABE, ABF, ABH, AMS, AMH, AME, PR, AG, TD, AK, AS, PH
Medical	HM
Dental	DT

At 37%, the Adm./Clerical ratings had the overall highest percent

TABLE 59

Percent in First, Second, Third (+) Enlistments
Occupation Groups and Ratings
1972 v. 1976

Occupation Group/Rating	1st Enlistment			2nd Enlistment			3rd Enlistment or More		
	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -
Deck									
BM	53	44	9	14	20	6	33	36	3
MA	36	16	20	18	29	11	46	55	9
QM	*	4		*	7		*	89	
SM	59	50	9	11	18	7	30	32	2
OS	52	45	7	10	16	6	38	39	1
EW	*	61		*	15		*	24	
ST	41	52		28	18		31	30	1
STG	9	--	9	29	3	4	62	97	35
STS	84	58	26	13	17	1	3	25	22
OT	76	54	22	21	22	1	3	24	21
	64	57	7	18	19	1	18	24	6
Ordnance									
	54	51	3	16	20	4	30	29	1
TM									
GM	53	43	10	14	22	8	33	35	2
GMM	--	--		2	1		98	99	1
GMT	59	59		14	20	6	27	21	6
GMG	42	42	4	18	18	9	40	40	5
	46	42		13	22		41	36	

TABLE 59 (cont'd)

Percent in First, Second, Third (+) Enlistments
Occupation Groups and Ratings
1972 v. 1976

Occupation Group/Rating	1st Enlistment			2nd Enlistment			3rd Enlistment or More		
	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -
Ordnance (cont'd)									
FT	--	--		--	--		99	99	
FIG	71	65	6	15	17	2	14	18	4
FTM	58	66		24	14		18	20	2
FTB	51	49	2	29	33	4	20	18	
MT	50	50		26	32	6	24	18	2
MN	62	48	14	7	25	18	31	27	6
Electronics									4
	61	57	4	23	21		16	22	6
ET	12	2							
ETN	78	77	10	34	25		54	73	19
ETR	81	79	2	20	21	1	2	2	
DS	55	65		17	19	2	2	2	
			10	32	17		13	18	5
Precision Equip.									
	61	44	17	10	25	15	29	31	2
PI	--	--		--	--		100	100	
IM	65	41	24	9	29	20	26	30	4
OM	58	49	9	13	21	8	29	30	1

TABLE 59 (cont'd)
Percent in First, Second, Third (+) Enlistments
Occupation Groups and Ratings
1972 v. 1976

Occupation Group/Rating	1st Enlistment			2nd Enlistment			3rd Enlistment or More		
	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -
Adm./Cler.	53	42	11	14	21	7	33	37	4
NC	*	--		*	5		*	95	
RM	60	49	11	11	19	8	29	32	3
CTT	57	50	7	18	16		25	34	9
CTA	67	54	13	10	19	9	23	27	4
CTM	50	53	3	32	19	13	18	28	10
CTO	71	60	11	11	19	8	18	21	3
CTR	62	48	14	14	15	1	24	37	13
CTI	62	43	19	16	20	4	22	37	15
YN	48	34	14	13	25	12	39	41	2
LN	*	12		*	24		*	64	
PN	53	48	5	10	19	9	37	33	4
DP	56	51	5	16	17	1	28	32	
SK	45	40	5	14	20	6	41	40	1
DK	37	39	2	22	25	3	41	36	5
MS	*	32		*	22		*	46	
CS	42	*		19	*		39	*	
SD	*	*		*	*		*	*	
SH	41	42	1	13	26	13	46	32	14
JO	57	52	5	9	22	13	34	26	8
PC	60	44	16	12	23	11	28	33	5
IS	*	48		*	20		*	32	

TABLE 59 (cont'd)

Percent in First, Second, Third (+) Enlistments
Occupation Groups and Ratings
1972 v. 1976

Occupation Group/Rating	1st Enlistment			2nd Enlistment			3rd Enlistment or More		
	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -
Miscellaneous									
	98	96	2	1	2	1	1	2	1
LI	60	35	25	10	31	21	30	34	4
DM	46	24	22	9	22	13	45	54	9
MU	56	29	27	11	23	12	33	48	15
SN	99	98	1	**	2	2	**	**	
Eng./Hull									
	65	64	1	11	16	5	24	20	4
MM	56	57	1	16	22	6	28	21	7
EN	45	51	6	18	17		37	32	5
MR	60	54	6	10	21	11	30	25	5
BT	52	61	9	13	15	2	35	24	11
BR	--	2	2	6	9	3	94	89	5
EM	54	55	1	15	21	6	31	24	7
IC	59	55	4	15	22	7	26	23	3
HT	57	56	1	12	18	6	31	26	5
PM	57	51	6	10	24	14	33	25	8
ML	54	55	1	7	16	9	39	29	10
FN	99	97	2	**	2	2	**	**	
Construction									
	58	57	1	17	15	2	25	28	3
CU	2	--	2	2	9	7	96	91	5
EA	69	52	17	12	20	8	19	28	9
CE	57	52	5	16	18	2	27	30	3

TABLE 59 (cont'd)

Percent in First, Second, Third (+) Enlistments
Occupation Groups and Ratings
1972 v. 1976

Occupation Group/Rating	1st Enlistment			2nd Enlistment			3rd Enlistment or More		
	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -
Const. (cont'd)									
EQ	--	--		3	--	3	97	100	3
EO	49	58	9	22	11	11	29	31	2
CM	51	50	1	21	16	5	28	34	6
BU	59	57	2	15	16		26	27	1
SW	54	51	3	20	17	1	26	32	6
UT	54	57	3	13	17	4	33	26	
CN	94	99	5	5	**	5	**	**	7
Aviation									
	62	55	7	11	19	8	27	26	1
AF	--	1	1	1	1		99	98	1
AV	--	--		--	--		100	100	
AD	--	--		1	1		99	99	
ADR	44	33	11	8	12	9	48	55	7
ADJ	57	46	11	12	21	8	31	33	2
AT	56	46	10	16	24	8	28	30	2
AX	57	57		11	21	10	32	22	
AW	49	53	4	15	18	3	36	29	10
AO	56	49		14	22	8	30	29	7
AQ	64	44	20	20	34	14	16	22	1
AC	50	48	2	14	23	9	36	29	7
AB	3	--	3	3	4	1	94	96	2
ABE	69	67	2	5	16	11	26	17	9
ABF	59	59		10	21	11	31	20	11

TABLE 59 (cont'd)

Percent in First, Second, Third (+) Enlistments
Occupation Groups and Ratings
1972 v. 1976

Occupation Group/Rating	1st Enlistment		2nd Enlistment		3rd Enlistment or More	
	1972 %	1976 % + - gain/loss	1972 % + - gain/loss	1976 % + - gain/loss	1972 % + - gain/loss	1976 % + - gain/loss
Aviation (cont'd)						
ABH	51	49	13	21	36	30
AE	57	47	13	23	30	30
AM	--	--	--	--	100	100
AMS	53	47	12	22	35	31
AMH	58	49	11	26	31	25
AME	56	54	16	20	28	26
PR	51	49	11	18	38	33
AG	47	48	13	17	40	35
TD	54	47	12	23	34	30
AK	44	34	16	28	40	38
AZ	62	37	15	27	23	36
AS	--	1	6	13	94	86
ASE	84	52	11	37	5	11
ASH	79	58	11	29	10	13
ASM	71	39	15	24	14	17
PH	45	45	14	18	41	37
PT	53	*	21	*	26	*
AN	98	96	**	3	**	**
		2		3		
						4
					13	8
					6	4
					3	6
					3	2
					5	5
					4	4
					2	2
					13	13
					8	8
					6	6
					4	4
					5	5
					5	5
					4	4
					2	2
					13	13
					6	6
					3	3
					3	3
					4	4
					26	26
					**	**

TABLE 59 (cont'd)

Percent in First, Second, Third (+) Enlistments
Occupation Groups and Ratings
1972 v. 1976.

Occupation Group/Rating	1st Enlistment			2nd Enlistment			3rd Enlistment or More		
	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -	1972 %	1976 %	gain/loss + -
Medical (HM)	67	62	5	9	17	8	24	21	3
Dental (DT)	65	65		9	14	5	26	21	5

* Rating did not exist in that year

**** Less than 1%**

Note: (1) The Miscellaneous, Engineering & Hull, Construction, and Aviation Occupation Groups' totals contain SN, FN, CN, and AN apprenticeship figures respectively -- mainly 1st enlistment personnel.

(2) A dash (--) means that there was no enlistment percentage in that category.

of personnel who were in their third (+) enlistments at the end of FY 76. The lowest percents were recorded by Eng./Hull (20%), Medical (21%), Dental (21%), and Electronics (22%). Every rating in the Eng./Hull occupation group, except EN and BR, was under 30%.

Enlistment figures (Table 60) for apprentices (E1-E3) were included in the analysis to determine trends by first, second, and third enlistments. It may be assumed that a constant or increasing percent of apprentices who are in their first enlistments is desirable. On the other hand, if the fraction of apprentice personnel in their second or third (+) enlistments tends to increase during the period 1972 to 1976, a trend of counter job mobility might be suggested. Ideally, it would seem that at the end of the first enlistment, a great majority of sailors with a 4-year commitment or longer should have achieved pay grade E-4.

From this point of view, the figures in Table 60 are neither particularly encouraging nor discouraging. Except for CN sailors, who account for only a small share of E1-E3 personnel, there have been small increases virtually from year-to-year between 1972 and 1976 in second and third enlistments for SN, FN, and AN. While these increases appear to be minute, they may in fact help to explain the oversupply (see Table 3) of E-1 and E-2 personnel in recent years.

Table 61 shows for each rating the percent of total personnel in MG 1, II and UIII (and total: i.e., SE's) who are in their third (+) enlistment for the years 1972, 1974, and 1976. For example, the number "35" after BM and below MG I for the year 1972 means that, at the end of FY 72, 35% of the BM's in MG I were in their third enlistment or longer.

The figures presented in Table 61 are intended to permit analysis of

TABLE 60

Seamen, Firemen, Constructionmen, and Airmen
Percent in First, Second, and Third (+) Enlistments
1972 to 1976

	<u>1st Enlistment</u>				
	72	73	74	75	76
Seamen	99.40	98.77	98.37	97.45	97.65
Firemen	99.26	99.01	98.46	97.24	97.09
Constructionmen	94.38	95.43	94.62	93.87	99.67
Airmen	98.96	98.49	97.94	96.92	96.69
	<u>2nd Enlistment</u>				
	72	73	74	75	76
Seamen	0.55	1.18	1.58	2.42	2.23
Firemen	0.67	0.95	1.49	2.61	2.84
Constructionmen	5.30	4.42	5.14	5.66	0.33
Airmen	0.94	1.46	1.98	2.94	3.13
	<u>3rd Enlistment</u>				
	72	73	74	75	76
Seamen	0.05	0.05	0.05	0.13	0.12
Firemen	0.07	0.04	0.05	0.15	0.07
Constructionmen	0.32	0.15	0.24	0.47	--
Airmen	0.01	0.05	0.08	0.14	0.18

TABLE 61

Percent of Third (+) Enlistments in Mental Groups I, II, and Upper III
by Ratings
1972, 1974, 1976

Occupation Group/Rating	1972					1974					1976				
	I	II	U	III	SE	I	II	U	III	SE	I	II	U	III	SE
<u>Deck</u>															
BM	35	32	34	34	33	43	44	42	43	43	60	56	51	53	53
MA	--	--	--	--	--	72	82	87	83	83	86	87	91	89	89
QM	23	25	28	28	26	33	27	26	27	27	33	27	26	27	27
SM	23	29	33	33	31	41	40	37	39	39	35	30	32	31	31
OS	--	--	--	--	--	29	27	23	26	26	36	21	21	21	21
EW	21	29	29	29	28	21	30	43	31	31	26	25	38	27	27
ST	47	62	63	63	60	54	71	83	71	71	90	97	99	96	96
STG	--	--	2	2	--	--	1	3	1	1	16	22	27	22	22
STS	1	--	5	5	1	1	--	2	1	1	23	20	22	21	21
OT	10	17	17	17	16	13	22	28	22	22	30	24	21	24	24
<u>Ordinance</u>															
TM	20	28	32	32	29	33	35	38	36	36	40	32	31	32	32
GM	3	31	33	33	69	99	97	98	98	98	99	97	99	98	98
GMM	1	7	36	36	14	3	16	41	22	22	10	14	20	16	16
GMT	20	33	41	41	34	42	42	43	42	42	57	40	28	36	36
GMG	5	15	34	34	23	9	20	38	28	28	18	18	33	25	25
FT	98	99	99	99	99	99	99	99	99	99	99	99	99	99	99
FTG	13	13	11	11	13	17	18	14	17	17	21	16	13	16	16
FTM	15	16	12	12	15	23	18	14	19	19	28	17	10	18	18
FTB	21	18	13	13	18	22	19	12	19	19	19	16	8	16	16
MT	25	21	18	18	21	31	22	13	22	22	32	15	7	16	16
MN	17	25	37	37	28	35	29	39	32	32	40	27	26	27	27

TABLE 61 (cont'd)

Percent of Third (+) Enlistments in Mental Groups I, II, and Upper III
by Ratings
1972, 1974, 1976

Occupation Group/Rating	1972					1974					1976				
	I	II	U	III	SE	I	II	U	III	SE	I	II	U	III	SE
<u>Electronics</u>															
ET	16	10	11	12	12	58	69	79	66	66	67	72	74	71	71
ETN	--	--	2	1	1	1	1	1	1	1	1	1	--	1	1
ETR	--	--	1	--	--	1	--	--	--	--	1	.	--	--	--
DS	7	12	7	10	10	13	15	14	14	14	19	15	14	16	16
<u>Precision Equip.</u>															
PI	99	99	--	99	99	99	99	99	99	99	99	99	99	99	99
IM	17	23	25	23	23	25	23	26	24	24	29	26	25	26	26
OM	35	27	30	29	29	37	32	39	34	34	45	28	29	29	29
<u>Adm./Clerical</u>															
NC	--	--	--	--	--	89	92	91	91	91	94	92	88	91	91
RM	22	28	27	27	27	36	37	30	34	34	48	41	27	35	35
CTT	14	25	28	24	24	28	40	32	36	36	54	45	20	38	38
CTA	11	26	19	22	22	30	33	19	29	29	49	38	15	31	31
CTM	14	17	23	16	16	23	22	22	23	23	38	22	17	26	26
CTO	9	19	18	18	18	18	26	23	24	24	24	24	14	21	21
CTR	14	24	25	23	23	32	48	46	46	46	53	45	33	41	41
CTI	18	22	16	20	20	35	44	27	39	39	43	39	23	38	38
YN	27	36	37	36	36	35	41	35	38	38	50	44	38	42	42
LN	--	--	--	--	--	63	63	71	65	65	69	69	71	70	70
PN	16	28	39	31	31	21	25	31	27	27	27	26	31	28	28
DP	15	25	32	26	26	17	26	32	26	26	26	30	37	31	31
SK	22	26	37	30	30	37	35	37	36	36	39	33	31	32	32

TABLE 61 (cont'd)

Percent of Third (+) Enlistments in Mental Groups I, II, and Upper III
by Ratings
1972, 1974, 1976

Occupation Group/Rating	1972					1974					1976				
	I	II	U	III	SE	I	II	U	III	SE	I	II	U	III	SE
<u>Adm./Cler. (Cont'd)</u>															
DK	20	35	41	36	32	35	31	33	37	28	30	29			
MS	--	--	--	--	--	--	--	--	27	21	26	24			
CS	14	18	31	25	33	24	30	27	--	--	--	--			
SD	--	--	--	--	33	26	35	33	--	--	--	--			
SH	11	21	28	25	30	28	32	31	11	17	19	18			
JO	37	35	25	33	40	29	21	29	38	25	20	26			
PC	32	24	22	24	29	28	26	27	35	26	32	29			
IS	--	--	--	--	--	--	--	--	40	34	17	32			
<u>Miscellaneous</u>															
LI	15	26	21	23	18	31	22	26	80	44	26	35			
DM	31	42	54	43	43	41	47	43	43	55	58	55			
MU	38	28	31	30	44	33	30	34	56	47	39	46			
SN	--	--	--	--	--	--	--	--	--	--	--	--			
<u>Eng./Hull</u>															
MM	5	17	39	20	7	16	33	18	10	15	22	16			
EN	15	26	34	29	18	24	32	27	23	21	26	24			
MR	14	21	32	24	15	21	29	23	18	19	21	20			
BT	11	17	31	23	13	16	21	18	22	15	16	16			
BR	50	94	93	92	50	89	88	88	99	84	83	84			
EM	12	27	42	28	14	25	34	25	14	19	25	20			
IC	14	23	32	23	19	23	22	22	21	20	18	19			

TABLE 61 (cont'd)

Percent of Third (+) Enlistments in Mental Groups I, II, and Upper III
by Ratings
1972, 1974, 1976

Occupation Group/Rating	1972					1974					1976				
	I	II	U	III	SE	I	II	U	III	SE	I	II	U	III	SE
<u>Eng./Hull (Cont'd)</u>															
HT	6	16	30	21	21	9	16	23	19	19	10	15	17	16	16
PM	25	22	36	27	23	33	20	29	23	23	14	15	14	15	15
ML	14	27	38	30	30	28	25	38	30	30	20	29	22	25	25
FN	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<u>Construction</u>															
CU	80	96	--	93	93	75	96	99	93	93	83	85	99	87	87
EA	10	16	28	16	16	21	18	18	18	18	27	19	22	21	21
CE	18	23	23	22	22	21	23	22	22	22	33	24	22	24	24
EQ	66	99	99	96	96	99	99	99	99	99	99	99	99	99	99
EO	11	21	30	24	24	21	19	24	21	21	26	21	24	23	23
CM	15	23	32	26	26	17	19	30	23	23	36	26	31	29	29
BU	13	19	30	23	23	15	15	22	17	17	25	18	22	20	20
SW	23	22	25	23	23	29	17	22	20	20	46	30	24	28	28
UT	26	30	33	31	31	19	22	27	24	24	35	23	22	23	23
CN	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<u>Aviation</u>															
AF	96	98	99	98	98	97	98	98	98	98	99	98	97	97	97
AV	99	98	99	99	99	99	99	99	99	99	99	99	99	99	99
AD	99	97	98	99	99	99	99	99	95	95	99	99	99	99	99
ADR	30	36	51	41	41	44	50	57	52	52	57	49	51	50	50
ADJ	16	20	32	24	24	19	24	31	27	27	28	27	28	27	27

TABLE 61 (cont'd)

Percent of Third (+) Enlistments in Mental Groups I, II, and Upper III
by Ratings
1972, 1974, 1976

Occupation Group/Rating	1972					1974					1976				
	I	II	U	III	SE	I	II	U	III	SE	I	II	U	III	SE
<u>Aviation (Cont'd)</u>															
AT	29	26	23	23	26	38	32	25	25	32	38	28	25	25	29
AX	32	33	22	22	31	36	33	21	21	32	25	21	16	16	21
AW	23	37	58	37	37	34	37	31	31	36	39	27	22	22	27
AO	15	19	32	23	23	34	29	29	29	29	39	20	21	21	26
AQ	16	14	12	14	14	21	17	14	14	17	26	18	16	16	19
AC	21	33	43	33	33	29	31	30	30	31	30	29	25	25	28
AB	99	94	91	93	93	99	94	94	94	95	99	96	93	93	95
ABE	9	10	26	15	15	10	12	15	15	13	20	16	10	10	12
ABF	3	14	29	20	20	12	15	18	18	16	30	13	15	15	14
ABH	9	19	28	23	23	15	25	24	24	24	42	26	20	20	22
AE	20	26	33	27	27	31	32	33	33	32	40	28	24	24	27
AM	99	97	99	98	98	99	98	99	99	98	99	99	99	99	99
AMS	15	22	36	26	26	18	25	32	32	27	29	26	25	25	25
AMH	17	20	32	24	24	23	23	28	28	25	33	23	16	16	20
AME	10	16	29	20	20	13	21	26	26	23	18	24	20	20	22
PR	16	29	46	34	34	24	32	39	39	35	32	32	28	28	30
AG	41	39	38	39	39	34	37	38	38	37	40	34	40	40	35
TD	29	33	40	33	33	41	36	36	36	37	43	29	25	25	30
AK	25	33	42	36	36	34	36	32	32	34	50	39	35	35	37
AZ	12	20	22	20	20	20	25	27	27	25	44	37	35	35	36
AS	86	93	93	93	93	70	94	98	98	94	50	81	90	90	82
ASE	--	2	7	7	2	1	3	8	8	4	9	6	5	5	6
ASH	--	--	10	10	2	--	2	10	10	4	--	8	11	11	8
ASM	--	2	11	11	4	--	5	12	12	7	--	13	12	12	12

TABLE 61 (cont'd)

Percent of Third (+) Enlistments in Mental Groups I, II, and Upper III
by Ratings
1972, 1974, 1976

Occupation Group/Rating	1972					1974					1976				
	I	II	U	III	SE	I	II	U	III	SE	I	II	U	III	SE
<u>Aviation (Cont'd)</u>															
PH	35	39	41		39	28	32	31		31	39	33	34		34
PT	28	22	24		23	33	26	24		26	--	--	--		--
AN	--	--	--		--	--	--	--		--	--	--	--		--
<u>Medical</u>															
HM	22	25	18		23	26	25	18		23	24	23	17		21
<u>Dental</u>															
DT	24	26	23		25	34	26	16		22	41	30	15		23

Notes:

- (1) SE = School Eligibles (includes Mental Groups I, II and UIII)
- (2) A dash (--) means that either a percent cannot be given because the rating did not exist in that year, or, in the case of existing ratings, the percent is less than 1%. Figures are not given for the apprenticeships (SN, FN, CN, and AN) because of the small percent (see Table 60) of apprentice personnel in their third enlistment or greater.

reenlistment data by mental groups. Two questions appear worthy of exploration: What is the fraction of MGs I, II and UIII consisting of personnel in their 3rd enlistment or longer (hereafter called "career" personnel)?; and (2) Has this fraction been increasing or decreasing by ratings? These questions were explored in an effort to gain a more exact assessment of any existing recent trends in mental potential for career personnel.

In comparing 1972 with 1976 for the 93 ratings for which figures existed for both years, it was found that in 55 ratings the fraction of personnel who are SE's increased or remained constant; in the other 38 ratings, it decreased. Therefore, in terms of the direction in which these percentages changed, there seemed to be a slight tendency for SE personnel to represent a larger fraction of the career personnel.

Ratings in the Deck, Ordnance, Electronics, Adm./Clerical, and Miscellaneous groups were most uniform in showing, with few exceptions, increases in the fraction of the career personnel who were SE counts; while ratings in the Construction and the Aviation occupation groups were fairly evenly divided by increases and decreases. The Eng./Hull occupation group was unique in that every rating (10) dropped 4% to 12% between 1972 and 1976 in the fraction of third (+) enlistments who were SE.

Any implications drawn from the above summaries must take into account a number of factors. First, it would not be unusual for some ratings (e.g., STG, STS, the CT specialties, various Aviation group ratings, etc.) to increase their career personnel's share of SE counts between 1972 and 1976. Many of these ratings are relatively young, and consequently the great majority of their personnel would more likely be in first and second

enlistments in 1972 than in 1976. Therefore, any 1976 increases for these ratings reported in Table 61 must be regarded as the inevitable result of many new personnel in new ratings in 1972 having joined the career ranks four years later.

Second, some of the older ratings, like ET, ST, GM, AD, and AM, have in recent years become increasingly manned almost entirely with senior Petty Officers, that is with personnel from pay grades E-6 upward. As such, it is predictable that SE fractions of career personnel in these ratings would increase to and remain at high levels.

The most perplexing finding from these data was that career personnel had declined as a group in its fraction of MGs I, II and UIII counts in every Eng./Hull rating by the end of FY 76. Most of these ratings are long-established, with the usual distribution of personnel from pay grade E-1 to E-9. Therefore, the losses cannot be attributed to the irregular distribution factors discussed earlier.

Table 62 was constructed to help determine whether presently SE personnel have what might be called an "appropriate share" of career personnel. An "appropriate share" of career personnel may be defined as a percent of total SE personnel in a rating who are career personnel (3rd (+) enlistment) which is equal to a percent of all personnel assigned to a rating who are career personnel. Thus, if 55% of all personnel in the BM rating were in the 3rd or later enlistment, it would seem "appropriate" that 55% of SE personnel in the BM rating should also be in the 3rd or later enlistment. This criterion implies simply that the SE's of a given rating be uniformly distributed throughout all enlisted categories.

Of course, one could argue that, since career personnel ought to be

TABLE 62

Percent of Total Enlisted Personnel in Each Rating (Column A)
 Percent of SE Personnel in Each Rating (Column B) Who Were
 Career Personnel (3rd Enlistment or Longer) in 1976

Rating	A	B	Rating	A	B
<u>Deck</u>			<u>Adm./Clerical</u>		
BM	55	53	NC	95	91
MA	89	89	RM	32	35
QM	32	27	CTT	34	38
SM	39	31	CTA	27	31
OS	24	21	CTM	28	26
EW	30	27	CTO	21	21
ST	97	96	CTR	37	41
STG	25	22	CTI	37	38
STS	24	21	YN	41	42
OT	24	24	LN	64	70
<u>Ordnance</u>			PN	33	28
TM	35	32	DP	32	31
GM	99	98	SK	40	32
GMM	21	16	DK	36	29
GMT	40	36	MS	46	24
GMG	36	25	SH	32	18
FT	99	99	JO	26	26
FTG	18	16	PC	33	29
FTM	20	18	IS	32	32
FTB	18	16	<u>Miscellaneous</u>		
MT	18	16	LI	34	35
MN	27	27	DM	54	55
<u>Electronics</u>			MU	48	46
ET	73	71	<u>Eng./Hull</u>		
ETN	2	1	MM	21	16
ETR	2	--	EN	32	24
DS	18	16	MR	25	20
<u>Precision Equip.</u>			BT	24	16
PI	100	99	BR	89	84
IM	30	26	EM	24	20
OM	30	29	IC	23	19
			HT	26	16
			PM	25	15
			ML	29	25

- Notes: (1) SE = School Eligibles (Mental Groups I, II & UIII)
 (2) A = Percent of total enlisted personnel assigned to a rating who were in their 3rd or later enlistment at the end of FY 76.
 (3) B = Percent of SE personnel assigned to a rating who were in their 3rd or later enlistment at the end of FY 76.

TABLE 62 (cont'd)

Percent of Total Enlisted Personnel in Each Rating (Column A)
 Percent of SE Personnel in Each Rating (Column B) Who Were
 Career Personnel (3rd Enlistment or Longer) in 1976

Rating	A	B	Rating	A	B
<u>Construction</u>			<u>Aviation (cont'd)</u>		
CU	91	87	AG	35	35
EA	28	21	TD	30	30
CE	30	24	AK	38	37
EQ	100	99	AZ	36	36
EO	31	23	AS	86	82
CM	34	29	ASE	11	6
BU	27	20	ASH	13	8
SW	32	28	ASM	17	12
UT	26	23	PH	37	34
<u>Aviation</u>			<u>Medical</u>		
AF	98	97	HM	21	21
AV	100	99			
AD	99	99	<u>Dental</u>		
ADR	55	50	DT	21	23
ADJ	33	27			
AT	30	29			
AX	22	21			
AW	29	27			
AO	29	26			
AQ	22	19			
AC	29	28			
AB	96	95			
ABE	17	12			
ABF	20	14			
ABH	30	22			
AE	30	27			
AM	100	99			
AMS	31	25			
AMH	25	20			
AME	26	22			
PR	33	30			

- Notes: (1) SE = School Eligibles (Mental Groups I, II & UIII)
 (2) A = Percent of total enlisted personnel assigned to a rating who were in their 3rd or later enlistment at the end of FY 76.
 (3) B = Percent of SE personnel assigned to a rating who were in their 3rd or later enlistment at the end of FY 76.

the "cream" retained in the Navy as petty officers from a larger group of original enlistees, the fraction of SE's who are career personnel should be significantly higher than the fraction of total personnel who are career personnel. Anything less than this "appropriate share" would indicate that a rating is failing to retain even as much as a representative share of personnel from higher mental groups for Navy careers.

From Table 62, one can see that 78 or 100 ratings (excluding ETR's) did not meet the criterion described above. That is, in 78 ratings the percent of SE personnel who were career personnel was lower than the percent of total personnel who were career personnel. This was true of all ratings in the Electronics, Precision Equipment, Eng./Hull, and Construction occupation groups; and for the great majority of the ratings in the Deck, Ordnance, and Aviation occupation groups. Only in the Adm./Clerical and Miscellaneous occupation groups were less than half of the ratings affected this way.

In the case of the 22 ratings which did not yield the negative results described above, career personnel of 12 ratings had a share of SE personnel equal to their share of total personnel within each rating. The remaining 10 ratings had only slightly larger shares of SE personnel (1% to 4%), except 6% for LN's.

By contrast, of the 78 ratings with career personnel accounting for a smaller share of SE personnel than that for total personnel, the share of SE personnel for 31 ratings was at least 5% less than the share of total personnel. The difference between the two shares (total v. SE) was fairly substantial in the case of a few ratings as follows: GMG (-11%), MS (-22%), SH (-14%), HT (-10%), and PM (-10%).

III. CONCLUSIONS

Age

The Navy is presently experiencing significant changes in the age, sex, and racial distribution of its personnel. The rapid increase in the percentage of sailors under 21 years of age, and a decrease in ages 21-24, suggests a growth in fraction of enlisted personnel consisting of inexperienced, first-term enlistees and a reduction in share of the more experienced reenlistee. Indeed, enlistment figures show that 51% to 65% of the personnel in eight of the eleven occupation groups were in their first enlistment at the end of FY 76. Furthermore, 72¹ of 101 ratings increased their share of 20-and-under personnel between 1972 and 1976. Especially large gains in counts for youth were acquired by the technical occupation groups of Deck, Ordnance, Electronics, Engineering and Hull, and Aviation during the 1972-76 period.

Sex

Navy women will probably play more diversified professional roles in the future. There was a sizable increase in the number of ratings with females assigned between 1972 and 1976. Although 93% of Navy females were assigned to the Adm./Clerical, Aviation, Medical, and Miscellaneous occupation groups at the end of FY 76, women have begun to appear in the

¹The apprenticeships (SN, FN, CN, & AN) are excluded from this count.

Ordnance, Eng./Hull, and Construction ranks, and during the 1972-76 period they increased their numbers in the Deck, Electronics, and Dental occupation groups as well. With 82% of females, as compared to 74% for men, in Mental Groups I, II and U III at the end of FY 76, the percentage of Navy women with high mental potential appears to be substantially greater than that for Navy men.

Race

Navy non-white personnel probably will greatly expand their involvement in a number of occupational areas in the future. The non-white fraction of total personnel has risen steadily in recent years and stood at 14% at the end of FY 76. While non-white increases in numbers during the 1972-76 period made up for less than one-third of white decreases in numbers for that time frame, the former group nevertheless has made relatively sizable numerical increases in ratings from the Adm./Clerical, Eng./Hull, Aviation, and Miscellaneous occupation groups.

Aptitude scores and mental group classifications for non-whites have been significantly lower than those of Whites. At the end of FY 76, the percent of "School Eligibles" (Mental Groups I, II and upper III) was 2-4 times higher for Whites than non-whites, depending upon the rating considered. If Navy aptitude tests are reliable indicators of potential, and if present performance on these tests remains the same, any rapidly changing racial composition could carry important implications involving requirements for improved techniques of training for ratings requiring sophisticated technical skills.

Manning

With respect to manning, a significant trend of undermanning exists

for pay grades E3 and E5, and overmanning for E1 and E2. The overmanning for pay grades E1 and E2 may be the result of declining interest in advancement and/or a decreasing capacity to advance (see Appendix G regarding reading ability). The increase in fraction of apprentices who are in their second and third enlistments in the last few years supports the above possibility. On the other hand, the sharp cut-backs in total personnel since the end of the Vietnam conflict may be a cause of a temporary irregular manning pattern.

The upper supervisory ratings (E8 and E9) have been short of required strength for a number of years. This quantitative deficiency could become a serious qualitative deficiency if the need to increase the numerical strengths at these levels were ever to become more important than promoting personnel who can demonstrate required skills.

The Deck, Ordnance, Precision Equipment, and Eng./Hull occupation groups were below the 90% manning level at the end of FY 76. Once again, the possibility exists that quality might be sacrificed in the future in an effort to improve overall strength. The fact that SE personnel (MGs I, II and UIII) tend to be composed of less than an "appropriate share" of career personnel (3rd or later enlistments) suggests that standards of quality may already be decreasing.

Education

Levels of civilian education have risen substantially for enlisted personnel over the last decade or so. Although only about one-half of the enlisted ranks were high school graduates in 1960, 85% had high school diplomas in 1976. Yet, there has been a decline since 1972, especially

among apprentices, in the fraction of personnel with post-secondary school education.¹

Individual ratings can vary greatly by the civilian education levels of their personnel. For example, 100% of FTB's, as compared to 69% of BT's, were high school graduates at the end of FY 76. Furthermore, personnel from the electrical/electronic occupational specialties tend to have more years of civilian education than personnel from the mechanical specialties.

Aptitude Scores

Overall improvement of aptitude scores has not kept pace with the sharp increases in the education level of personnel. Although average GCT, ARI, and MECH scores were about the same in 1962 and 1976, the percent of high school graduates rose from 61% to 85%. Furthermore, in recent years, the differences between GCT scores for what the Navy calls "degree" and "no degree" personnel have become successively smaller.

Aptitude scores vary widely by occupation groups and ratings. The GCT and ARI scores averaged over the Electronics and Eng./Hull occupation groups differed by 9-10 points at the end of FY 76.

The range in aptitude scores is even wider among the different ratings, even within a given occupation group. At the end of FY 76, for example, CTI's had an average GCT of 65, and MS's, 44. However, the average GCT scores for the great majority of ratings were in the range of 50-59. Among technical ratings, the highest GCT scores were attained by personnel in electrical/electronic specialties; the lowest, by personnel in mechanical specialties.

Mental Groups

In terms of mental potential, Navy personnel as a group cluster more closely around the "average" than they did just a few years ago. Although the Navy's overall share of School Eligibles (personnel in Mental Groups I, II and Upper III) remained about the same between 1972 and 1976, the percent of Mental Groups I, II and IV went down, and Mental Group III, up. Thus, the total mental group spread tended to concentrate more toward the middle of the distribution by the end of FY 76, and the percent of "average" sailors has correspondingly increased.

Occupation groups and ratings are distinguished by mental group variation. At the end of FY 76, 98% of the personnel in the Electronics occupation group were School Eligibles, as compared to 64% for the Miscellaneous occupation group. The variation in fractions of personnel who were School Eligible ranged from 100% to as low as 33% over different ratings, with the highly technical ratings found at both ends of the range.

Enlistments

A high percentage of personnel in the Navy are in their first enlistment. The range was from 42% for Adm./Clerical personnel to 65% for Dental personnel at the end of FY 76. For other technical occupation groups the share of first enlistments was: Deck (44%), Ordnance (51%), Aviation (55%), Electronics (57%), and Eng./Hull (64%). The implications of having an unusually high percentage of first term personnel are obvious. In the Eng./Hull occupation group, almost two of every three sailors were in their first enlistment at the end of FY 76.

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MARYLAND UNIV BALTIMORE COUNTY BALTIMORE
SELECTING PRESENTATION MODES ACCORDING TO PERSONNEL CHARACTERIS--ETC(U)
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Career Personnel

Career personnel (third or later enlistments) contain less than a share of Mental Groups I, II and UIII than they ought to. At the end of FY 76, the career personnel in 78 or 100 ratings had a share of the upper mental group personnel which was less than their share of total personnel. This suggests that career personnel on the average have less mental potential than non-career (first and second enlistments) personnel.

Technical Rating Problems

Personnel shortages exist in many technical ratings along with less-than-average aptitude/schooling percentages, complicated by increasing or special skill requirements. Some ratings, especially in the Engineering & Hull occupation group, appear to be subject to all three problems. Any trade-off in quality vs. quantity of personnel, as previously indicated, impacts directly on the preparation of technical materials. However, those ratings with increasing rating requirements for technical skills present an additional problem, particularly in the case of any personnel who in the future might be admitted to a rating or advanced in pay grade after having met less stringent criteria than those applied in the past.

APPENDIX-A

General Requirements for School Eligibility and Navy Induction

	High School Graduates	Non-High School Graduates
School Eligibles	A	B
Non-School Eligibles	C	D

"A" Group: Navy applicants who are eligible for a Navy School because of having graduated from high school.

"B" Group: Navy applicants who are eligible for a Navy School, despite non-high school graduation, because of having attained a score of at least:

- (1) 148 on the GAM (GCT + ARI + MECH) on the Basic Test Battery (BTB or on the equivalent sub-tests of the Armed Services Vocational Aptitude Battery (ASVAB) for an AFQT of 49, or
- (2) 100 on GCT + ARI (BTB), or WK + AR (ASVAB).

"C" Group: Navy applicants who are eligible for induction into the Navy because of having attained a score between:

- (1) (for high school graduates) 125-134 on the GAM, for an AFQT of 21-30.
- (2) (for GED high school equivalency) 135-147 on the GAM, for an AFQT of 31-48.

"D" Group: Navy applicants who normally are ineligible for induction into the Navy because of insufficient years-of-education and low performance on the BTB or ASVAB.

Note: Categories "A: and "B" represent the general requirements for eligibility to attend a Navy School. To attend a particular school, personnel must meet the specific aptitude criteria for that school (see Appendix G).

APPENDIX-B

DEPARTMENT OF THE NAVY
Bureau of Naval Personnel
Washington, D.C. 20370

Canc frp: July 76

BUPERSNOTE 1236
Pers-551
3 March 1976

BUPERS NOTICE 1236

From: Chief of Naval Personnel
To: All Ships and Stations (less Marine Corps field addressees not having Navy personnel attached)
Subj: Armed Services Vocational Aptitude Battery (ASVAB); information concerning
Ref: (a) Catalog of Navy Training Courses (CANTRAC) (NAVTRA 10500)
(b) BUPERSMAN 1440220
Encl: (1) Qualifications for Formal Training
(2) Brief sheet (detach and utilize as appropriate, then destroy)

1. **Purpose.** To disseminate information on the Armed Services Vocational Aptitude Battery (ASVAB) which has replaced the Basic Test Battery (BTB) as the primary test utilized for enlistment screening and classification as of 1 January 1976.

2. **Background**

a. One form of ASVAB or another has been in use since 1968 in connection with the High School Train-

ing Program. Scores achieved by high school students have been used by counselors in discussing student aptitudes for civilian vocational training programs. Test results were also provided to local recruiting offices for seniors who could use scores to qualify for enlistment. Personnel entering the Navy on the basis of ASVAB scores were subsequently tested with the BTB at a recruiting station or training center, the same procedure that was followed when enlistment eligibility had been determined by the Armed Forces Qualification Test (AFQT) or the Short Basic Test Battery (SBTB).

b. In 1974, planning was initiated to develop a test battery which would provide each service aptitude measurement areas comparable to its current test battery, while at the same time achieving standardization of mental testing at the enlistment point.

c. The most recent ASVAB series (Forms 5, 6, and 7) includes sufficient subtests to compare with all subtests on the BTB as follows:

BASIC TEST BATTERY

General Classification Test (GCT)
Arithmetic Reasoning (ARI)
Mechanical Comprehension (MECH)
Clerical (CLER) or Coding Speed Test (CST)
Shop Practices (SHOP)
Electronics Technician Selection Test (ETST)

d. The ASVAB has three other subtest areas which are not currently utilized by the Navy in selection for any schools or ratings, but may be utilized in the future. They are the General Information (GI), Space

**ARMED SERVICES VOCATIONAL
APTITUDE BATTERY**

Word Knowledge (WK)
Arithmetic Reasoning (AR)
Mechanical Comprehension (MC)
Numerical Operations (NO) and Attention to Detail (AD)
Shop Information (SI)
Electronics Information (EI), and Mathematics Knowledge (MK), and General Science (GS)

Perception (SP), and the Automotive Information (AI). Forms 6 and 7 also include a Classification Inventory section which will provide four scores. These scores will be utilized in the future.

APPENDIX-B, Continued

BUPERSNOTE 1236

3 March 1978

3. Implementation

a. The ASVAB was implemented on 1 January 1976 by all services as the single recruiting and classification test. ASVAB scores will be reflected on the Enlisted Classification Record (NAVPERS 1070/603) in lieu of BTB scores in the same Navy Standard Score (NSS) format as BTB scores. Maximum scores will be in the mid-70's and minimum scores in the mid-20's.

b. Presently recorded BTB scores will remain valid and will continue to be utilized for selection for class "A" schools and programs. ASVAB qualifying scores will be published as school and program criteria along with BTB qualifying scores.

c. Personnel with BTB scores will not be retested on the ASVAB to determine eligibility for school or programs. Personnel desiring retesting in accordance with BUPERSMAN 1440260 will continue to be retested with an alternate version of the BTB until sufficient versions of the ASVAB are promulgated.

4. **Comparability.** In most instances, the ASVAB qualifications for a particular school or program can be readily ascertained by matching the BTB subtests with the ASVAB equivalents set forth in paragraph 2c above. With the inclusion of several subtests in the ASVAB, the clerical and electronics composites require that additional subtests be included as set forth below:

COMPOSITE

BTB

ASVAB

Clerical

GCT+CLER

WK+NO+AD

Electronics

ARI+double ETST

AR+MK+EI+GS

Enclosure (1) provides ASVAB and BTB test score qualifications to facilitate determination of eligibility for formal training. The qualifications set forth therein should be utilized until reference (a) is revised to include ASVAB qualifications.

5. **Cancellation contingency.** When incorporated in references (a) and (b).

W. L. McDONALD
Deputy Chief of Naval Personnel

Distribution:
SNDL Parts 1 and 2

APPENDIX-B, Continued

DUPERSNOTE 1236
3 March 1976

QUALIFICATIONS FOR FORMAL TRAINING

<u>SCHOOL/PROGRAM</u>	<u>BTB MINIMUM QUALIFICATION</u>	<u>ASVAB MINIMUM QUALIFICATION</u>
Aerographer's Mate (AG)	GCT+ARI=110	WK+AR=110
Air Controlman (AC)	GCT+ARI=110	WK+AR=110
Aircrew Survival Equipmentman (PR)	GCT+MECH+SP=156	WK+MC+SI=156
Aviation Antisubmarine Warfare Operator (AW)	GCT+ARI=110	WK+AR=110
Aviation Antisubmarine Warfare Technician (AX)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Aviation Boatswain's Mate (AB)	(3)GCT+ARI=96	WK+AR=96
Aviation Electrician's Mate (AE)	(1)ARI+2ETST=160	AR+MK+EI+GS=212
Aviation Electronics Technician (ATI)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Aviation Fire Control Technician (AQ)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Aviation Machinist's Mate (AD)	(3)ARI+ETST=96	AR+MK+EI+GS=193
Aviation Maintenance Administrationman (AZ)	GCT+ARI=105	WK+AR=105
Aviation Ordnanceman (AO)	(3)ARI+ETST=101	AR+MK+EI+GS=201
Aviation Storekeeper (AK)	GCT+ARI=105	WK+AR=110
Aviation Structural Mechanic (AM)	(3)GCT+MECH=96	WK+MC=96
Aviation Support Equipment Technician (AS)	GCT+MECH+SHOP=156	WK+MC+SI=156
Boiler Technician (BT)	GCT+MECH+SHOP=156	WK+MC+SI=156
builder (BU)	GCT+MECH+SHOP=150	WK+MC+SI=150
Communications Technician, Administrative (CTA)	GCT+CLER=110	WK+NO+AD=163
Communications Technician, Interpretive (CTI)	GCT+ARI+CLER=155	WK+AR+NO+AD=206
Communications Technician, Maintenance (CTM)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Communication Technician, Communications (CTO)	GCT+ARI=105	WK+AR=105
Communications Technician, Collection (CTR)	GCT+ARI=100	WK+AR=100
Communications Technician, Technical (CTT)	GCT+ARI=100	WK+AR=100
Construction Electrician (CE)	GCT+MECH+SHOP=156	WK+MC+SI=156
Construction Mechanic (CM)	GCT+MECH+SHOP=150	WK+MC+SI=150
Data Processing Technician (DP)	GCT+ARI=110	WK+AR=110
Data Systems Technician (DS)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Disbursing Clerk (DK)	GCT+ARI=105	WK+AR=105
Electrician's Mate (EM)	GCT+MECH+SHOP=156	WK+MC+SI=156
Electronics Technician (ET)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Electronic Warfare Technician (EW)	GCT+ARI=110	WK+AR=110
Engineering Aid (EA)	GCT+ARI=105	WK+AR=105
Engineman (EN)	GCT+MECH+SHOP=156	WK+MC+SI=156
Equipment Operator (EO)	GCT+MECH+SHOP=150	WK+MC+SI=150

Enclosure (1)

APPENDIX-B, Continued

REF ID: A66123

3 March 1976

<u>SCHOOL / PROGRAM</u>	<u>BTB MINIMUM QUALIFICATION</u>	<u>ASVAB MINIMUM QUALIFICATION</u>
Fire Control Technician (FT)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Gunner's Mate (GM) (includes GMT ASROC)	GCT+MECH+SHOP=163	WK+MC+SI=163
Gunner's Mate (Technician) (GMT)	GCT+MECH+SHOP=156	WK+MC+SI=156
Hull Maintenance Technician (HT)	GCT+MECH+SHOP=156	WK+MC+SI=156
Instrumentman (IM)	GCT+MECH+SHOP=163	WK+MC+SI=163
Intelligence Specialist (IS)	GCT+ARI=105	WK+AR=105
Interior Communications Electrician (IC)	GCT+MECH+SHOP=156	WK+MC+SI=156
Journalist (JO)	GCT+CLER=110	WK+NO+AD=163
Machinery Repairman (MR)	GCT+MECH+SHOP=156	WK+MC+SI=156
Machinist's Mate (MM)	GCT+MECH+SHOP=156	WK+MC+SI=156
Mess Management Specialist (MS)	GCT+ARI=100	WK+AR=100
Mineplan (MN)	GCT+MECH+SHOP=156	WK+MC+SI=156
Missile Technician (MT) (Polaris Electronics School)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Molder (ML)	GCT+MECH+SHOP=156	WK+MC+SI=156
Operations Specialist (OS)	GCT+ARI=110	WK+AR=110
Opticalman (OM)	GCT+MECH+SHOP=163	WK+MC+SI=163
Ocean Systems Technician (OT)	GCT+MECH+ETST=156	WK+MC+ME+EI+GS=258
Patternmaker (PM)	GCT+MECH+SHOP=156	WK+MC+SI=156
Personnelman (PN)	GCT+ARI=110	WK+AR=110
Photographer's Mate (PH)	GCT+ARI=105	WK+AR=105
Postal Clerk (PC)	GCT+ARI=110	WK+AR=110
Quartermaster (QM)	(3)ARI+SHOP=101	AR+SI=101
Radioman (RM)	GCT+ARI=100	WK+AR=100
Ship's Serviceman (SH)	GCT+ARI=100	WK+AR=100
Signalman (SM)	GCT+ARI=105	WK+AR=105
Sonar Technician (SURFACE) (STG)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Sonar Technician (SUBMARINE) (STS)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Steelworker (SW)	GCT+MECH+SHOP=150	WK+MC+SI=150
Storkeeper (SK)	GCT+ARI=105	WK+AR=105
Torpedoman's Mate (SURFACE) (TM)	(3)ARI+MECH=96	AR+MC=96
Torpedoman's Mate (SUBMARINE) (TM(SUB))	(3)ARI+MECH=96	AR+MC=96
Tradesman (TD)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Utilitiesman (UT)	GCT+MECH+SHOP=150	WK+MC+SI=150
Yeoman (YN)	GCT+CLER=110	WK+NO+AD=163
Avionics Group (AV)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Polaris Electronics (PE)	(1)ARI+2ETST=171	(2)MK+EI+GS=163,+AR=225
Submarine (SUBSN)	GCT+ARI=100	WK+AR=100
(SUBFR)	GCT+MECH+SHOP=150	WK+MC+SI=150

NOTES:

- (1) 2ETST means to double the ETST
- (2) In arriving at the qualifying composite, first add the MK, EI, and GS. If the result is less than 163, the individual is not qualified. If 163 or higher, add the AR; final total must be 225.
- (3) Change in criteria from reference (a).

APPENDIX-C

Conversion Table for BTB7-AFQT*

<u>Mental</u> <u>Group</u>	<u>BTB-7</u> <u>G+A+M</u> <u>Score</u>	<u>Equivalent</u> <u>AFQT Percen-</u> <u>tile Score</u>	<u>Mental</u> <u>Group</u>	<u>BTB-7</u> <u>G+A+M</u> <u>Score</u>	<u>Equivalent</u> <u>AFQT Percen-</u> <u>Tile Score</u>
I	211 or higher	99	upper	152	54
	205-210	98	III	151	53
	200-204	97	(cont'd)	150	52
	196-199	96		149	50
	193-195	95		148	49
	191-192	94		147	48
	190	93		146	47
				145	45
	188-189	92		144	44
	187	91	lower	143	43
	185-186	90	III	142	41
	184	89		141	39
	182-183	88		140	38
	181	87		139	36
	180	86		138	35
	179	85		137	33
	177-178	84		136	32
	176	83			
	175	82		135	30
II	174	81		134	29
	173	80		133	28
	172	79		132	27
	171	78		131	26
	170	76		130	25
	169	75		129	24
	168	74		128	23
	167	73		126-127	22
	166	71	IV	125	21
	165	70		124	20
	164	69		123	19
	163	67		122	18
	162	66		120-121	17
	161	65		119	16
				118	15
	160	64		116-117	14
	159	62		114-115	13
	158	61		112-113	12
upper III	157	60		109-111	11
	156	59		107-108	10
	155	58			
	154	56		97-106	9
	153	55	V	96 or lower	8

*Eight forms of the BTB-AFQT have been developed over the years, but BTB7-AFQT and BTB8-AFQT apply to the vast majority of enlisted personnel presently on active duty.

APPENDIX-D

Conversion Table for BTB8-AFQT*

Mental Group	BTB-8 G+A+M Score	Equivalent AFQT Percen- tile Score	Mental Group	BTB-8 G+A+M Score	Equivalent AFQT Percen- tile Score
I	214 or higher	99	upper III (cont'd)	153	54
	209-213	98		152	53
	204-208	97		151	52
	200-203	96		150	51
	197-199	95		149	50
	196	94		148	49
	194-195	93	lower III	147	48
				146	47
	192-193	92		145	45
	191	91		144	44
	188	89		143	43
	186-187	88		142	41
	185	87		141	40
	184	86		140	39
	182-183	85		139	37
	181	84		138	36
	180	83		137	35
	179	82		136	33
II	178	81		135	32
	177	80	IV	134	30
	176	79		133	29
	175	78		132	28
	174	77		131	27
	173	76		130	26
	172	75		129	25
	171	74		128	24
	170	73		127	23
	169	72		126	22
	168	71		125	21
	167	70		124	20
	166	69		123	19
	165	68		122	18
	164	66		120-121	17
upper III	163	65		118-119	16
				117	15
	162	64		116	14
	161	63		114-115	13
	160	62		111-113	12
	159	61		109-110	11
	158	60		104-108	10
	157	58	V	99-103	9
	156	57		98 or lower	8
	155	56			
	154	55			

*Eight forms of the BTB-AFQT have been developed over the years, but BTB7-AFQT and BTB8-AFQT apply to the vast majority of enlisted personnel presently on active duty.

APPENDIX-E

AFQT Conversion ASVAB Form 6 and 7

The AFQT is computed by adding three raw component scores: WK+AR+SP. The resulting total raw score is then converted to an AFQT percentile score using the following conversion table.

<u>Mental Group</u>	<u>Total Raw Score</u>	<u>Equivalent AFQT Percentile Score</u>	<u>Mental Group</u>	<u>Total Raw Score</u>	<u>Equivalent AFQT Percentile Score</u>
I	70	99	III (cont'd)	42	49
	69	98		41	48
	68	97		40	47
	67	96		39	46
	66	95		38	45
	65	94		37	43
	64	93		36	41
				35	39
	63	91		34	37
	62	89		33	35
II	61	86	IV	32	33
	60	83		31	31
	59	80			
	58	77		30	28
	57	75		29	25
	56	73		28	21
	55	71		27	19
	54	69		26	16
	53	67		25	13
	52	65		24	11
III				23	10
	51	64	V		
	50	62		22	8
	49	60		21	7
	48	58		20	6
	47	56		18-19	5
	46	55		16-17	4
	45	54		14-15	3
	44	52		12-13	2
	43	50		0-11	1

Example: Individual has the following raw scores on ASVAB 6 or 7:

WK of 25 AR of 18 SP of 20

The total raw score would equal (25 + 18 + 20 = 63).

Using the table above, the total raw score of 63 converts to an AFQT percentile score of 91.

APPENDIX-F

DEPARTMENT OF THE NAVY
Bureau of Naval Personnel
Washington, D.C. 20370

BUPERSINST 1133.25C
Pers-2124
3 December 1975

BUPERS INSTRUCTION 1133.25C

From: Chief of Naval Personnel
To: All Ships and Stations (less Marine Corps field addressees not having Navy personnel attached)
Subj: Career Reenlistment Objectives (CREO)
Ref: (a) BUPERSMAN 1040300 (Reenlistment)
(b) BUPERSINST 1130.22A (Broken-service Reenlistment)
(c) BUPERSINST 1133.22D (Reenlistment Quality Control)
(d) BUPERSMAN 2230180 (Lateral Conversion)
(e) BUPERSMAN 1060010 (SCORE Program)
(f) BUPERSMAN 1060020 (STAR Program)
(g) COMNAVCUITCOMINST 1130.8A (Navy Recruiting Manual-Enlisted)
Encl: (1) Open/Closed Rating/Rate Lists
(2) Brief sheet (detach and utilize as appropriate, then destroy)

1. Purpose. To establish objectives for enlisted career force management and to provide guidelines for the operation of current and future Navy programs designed to achieve those objectives.

2. Cancellation. This instruction supersedes BUPERS Instruction 1133.25B and is effective 1 January 1976.

3. Objectives

- a. Increase manning in undermanned ratings.
- b. Control overages in overmanned ratings.
- c. Provide for more viable and attractive career patterns for all members of the naval service.

4. Discussion. Proper management of the Navy's enlisted career force requires an individual profile for each rating to provide optimum paygrade and length-of-service (LOS) distribution of resources by rating within CNO requirements. Historically, certain

ratings/rates have been overmanned to the point of advancement stagnation while others have suffered from undermanning. It is necessary to provide positive managerial control over the existing programs defined by references (a) through (g) to balance personnel assets against needs. The CREO management program provides a meaningful system under which the objectives set forth in paragraph 3 can be attained. Existing retention, conversion, and certain enlistment procurement programs will be governed by needs as depicted in the Open/Closed Rating/Rates lists. Enclosure (1) will be updated periodically to reflect the manpower needs of the Navy.

5. Definitions

a. **Career personnel** - Enlisted personnel on active duty with over 4 years' active service.

b. **Career requirements** - The number of enlisted billets required in paygrade E-5 and above.

c. **Career manning** - Ratio of career personnel to career requirements in the force.

d. **Career Reenlistment Objective** - CREO is a personnel management system designed to provide current goals and direction for retention, conversion, and certain enlistment procurement programs. In this context, CREO provides centralized systematic guidance in enlisted career force management.

e. **First reenlistment** - Action which obligates a member to serve at least 2 years beyond initial active-duty obligation. In the case of 6 year obligors (6YO's) who have initially enlisted for 4 years and agreed to extend for two or more additional years, the operation of the extension is a first reenlistment for purposes of CREO.

f. **Subsequent reenlistment** - Action which obligates a member to serve beyond the first reenlistment. For the purpose of CREO, this includes any extension of the first reenlistment as defined above, of two or more years.

g. **Rating** - An occupational specialty which encompasses related aptitudes, training, experience, knowledge and skills.

APPENDIX-F, Continued

BUPERSINST 1133.25C

3 December 1975

h. Rate - Identifies personnel by rating and pay-grade (Example: RM3).

i. Rate manning - Ratio of personnel in a rate to requirements for that rate.

j. CREO Groups - Five groups are established within the CREO System. Groups A through E reflect specified conditions of career manning within individual ratings, ranging from extremely short to excessively overmanned.

(1) Group A - Rating career manning is less than 75 percent; extreme shortage of career strength relative to career requirements.

(2) Group B - Rating career manning is between 75 and 89 percent; shortage of career strength relative to career requirements.

(3) Group C - Rating career manning is approximately correct (90-105%); management is designed to stabilize at present levels.

(4) Group D - Rating career manning is in excess of 105 percent. First-term reenlistments need not be directly controlled, but to reduce overmanning, other actions may be employed, e. g., conversion programs, non-continuation, etc.

(5) Group E - Rating career manning is in excess of 105 percent; ratings are under direct control of CHNAVPERS. CHNAVPERS approval is required for all first-term reenlistments or extensions to initial enlistment, including extensions on active duty for Naval Reservists. Subsequent reenlistments may require CHNAVPERS approval. CHNAVPERS approval for continuation on active duty beyond 21 years may be required on a case basis. Applicable notes on Open/Closed Rating/Rate Lists apply.

k. CREO Categories - Five categories are established within the CREO system. Categories A through E reflect specific conditions of rate manning within individual ratings, ranging from extremely short to excessively overmanned.

(1) Category A - Rate manning is less than 75 percent; extreme shortage of personnel in rate.

(2) Category B - Rate manning is between 75 and 89 percent; shortage of personnel in rate.

(3) Category C - Rate manning is between 90 and 105 percent; rate manning is approximately correct; management is designed to stabilize at present levels.

(4) Category D - Rate manning is in excess of 105 percent; voluntary conversions to Groups A or B ratings are recommended if rating is also Group D.

(5) Category E - Rate manning is in excess of 105 percent. Conversion may be directed on an involuntary basis.

l. Open Skills - Special designations/NECs/skills which are critically undermanned and considered to be in CREO Group/Category A, without regard for the manning of the associated ratings.

6. Action. The following actions shall be taken to insure positive management of individual rating and rate manning levels through implementation of career strength enhancing programs currently in effect, as well as those which may be developed in the future:

a. Prior Service Members. Former members of the naval service who have been separated in excess of 24 hours shall be reenlisted at Navy recruiting activities in accordance with the guidance of references (b) and (g).

b. Active-Duty Members. Retention and rating conversion programs for active-duty members shall be governed by the following guidelines:

(1) Personnel in CREO Groups A and B will continue to be counseled at all levels of command concerning the advantages and opportunities of a Navy career in their current rating. Conversion from these ratings will not normally be authorized. Group A and B ratings are open for entry.

(2) Personnel in CREO Group C who qualify for assignment of reenlistment eligibility code RE-R1 shall be encouraged to reenlist in their present rating. Personnel who qualify for the assignment of reenlistment

APPENDIX-F, Continued

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eligibility code RE-I should be counseled concerning the benefits to be gained through rating conversion as well as the increased advancement opportunity accruing to members of CREO Groups A and B. Personnel in CREO Group C whose current rate is CREO Category A, B, or C will not normally be approved for rating conversion; however, requests will be considered on a case basis. Personnel whose current rate is CREO Category D or E may apply for rating conversion at any time. Category A and B ratings of Group C ratings are open for entry. Category C, D, or E rates of Group C ratings are closed.

(3) Personnel in CREO Group D will be counseled concerning the advisability of rating conversion. Such counseling will include information concerning limited advancement opportunities in their current rating, as well as the professional growth criterion of reference (c), which must be met in order to establish eligibility for service beyond 21 years. Those members in this rating group who qualify for reenlistment eligibility Code RE-R1 who elect to be separated are required to acknowledge the following Page 13 service record entry:

(date): "I understand that if I elect to be separated in excess of 24 hours, reenlistment will require approval of the Chief of Naval Personnel. I further understand that, if I am separated in excess of three months, I will be required to request rating conversion in order to be eligible to reenlist if my rating is in CREO Group D or E."

Those members in this rating group, qualifying for reenlistment eligibility code RE-I, who elect to be separated are required to acknowledge the following Page 13 entry:

(date): "I understand that if I elect to be separated in excess of 24 hours, reenlistment will require approval of the Chief of Naval Personnel. I further understand that, if my rating is in CREO Group D or E, in order to be eligible to reenlist I will be required to request conversion from

my present rating. Should my conversion request not be approved, I will be permitted to reenlist in pay-grade E-3 only in a general apprenticeship."

Responsibility for accomplishment of the above Page 13 entry shall be that of the last command to which the member is regularly attached for duty, and not necessarily the activity effecting separation.

(4) Personnel in CREO Group E will be required to obtain approval of CHNAVPERS in order to be eligible to effect a first reenlistment, or make operative or cancel any extension to the initial enlistment. Approval is also required for Naval Reservists serving on active duty who desire to extend their active duty. Subsequent reenlistments and extensions thereto will require CHNAVPERS approval only if so indicated in the notes section of the current Open/Closed Rating/Rate Lists.

(a) Three months prior to completing an enlistment or effecting any extension, the member who desires continued active naval service must submit an Enlisted Transfer and Special Duty Request (NAVPERS 1306/7). This request shall state whether the member desires to reenlist/extend in present rating or desires rating conversion. In any case, preferences for rating conversion to ratings in CREO Groups A or B of the latest list must be stated in the event the member is not accepted for reenlistment in present rating. The commanding officer's endorsement will include a definitive recommendation as to the desirability of retaining the member in naval service. This endorsement should also make a specific recommendation as to the member's aptitude for conversion to alternate ratings selected. Requests shall include as an enclosure a copy of the most recent page 9 and a summary of all NJPs awarded during current enlistment. In cases where there will be insufficient time remaining in the member's enlistment to allow orderly processing of the request, the member may be extended by the commanding officer for a period of 3 months pending final action by CHNAVPERS, citing this instruction as authority.

(b) Should members not be accepted for reenlistment/extension in present rating, they will be offered rating conversion. Conversion training will be

APPENDIX-F, Continued

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3 December 1975

authorized as required. Should members offered rating conversion decline the offer, they shall be discharged (or released from active duty if Naval Reservist) at End of Active Obligated Service (EAOS) and required to acknowledge the following Page 13 service record entry:

(date): "I understand that I have been denied reenlistment in my present rating due to manning considerations under the provisions of BUPERSINST 1133.25C and in accordance with CHNAVPERS 1tr. I was offered conversion to the _____ rating(s) which I declined. I further understand that as long as my present rating remains in CREO Group D or E of BUPERSINST 1133.25C that I will be required to request rating conversion in order to be eligible to reenlist and that if such request is disapproved, I will be authorized to reenlist at paygrade E-3 only in a general apprenticeship."

R) (c) Members who have executed but not made operative extensions to their first enlistment or term of active-obligated service are required to request authority to make the extension operative, or to cancel the extension.

(d) Members who have not executed extensions who do not desire to reenlist but who are otherwise eligible to reenlist or extend shall be discharged or released from active duty at EAOS and required to acknowledge the following Page 13 entry:

(date): "I understand that in order to be eligible to reenlist as long as my rating is in CREO Group D or E of BUPERSINST 1133.25C I must obtain the approval of the Chief of Naval Personnel. I further understand that, if my rating is in CREO Group D or E, I will be required to request rating conversion in order to be eligible to reenlist. Should my conversion request not be approved, I will be permitted to reenlist in paygrade E-3 only in a general apprenticeship."

(e) Should requests for voluntary conversion be insufficient to meet career manning goals, reenlistment denial will be required if involuntary conversion is not accepted by the member.

(f) Rating conversion, whether voluntary or required, shall be effected under the provisions of either reference (d) or (e).

W. L. McDONALD
Deputy Chief of Naval Personnel

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APPENDIX-F, Continued

DEPARTMENT OF THE NAVY
Bureau of Naval Personnel
Washington, D.C. 20370

BUPERSINST 1133.25C CH-2
Pers-521
9 February 1977

**BUPERS INSTRUCTION 1133.25C
CHANGE TRANSMITTAL 2**

From: Chief of Naval Personnel
To: All Ships and Stations (less Marine Corps
field addressees not having Navy personnel
attached)
Subj: Career Reenlistment Objectives (CREO)
Encl: (1) Revised Open/Closed Rating/Rates
Lists

1. Purpose. To promulgate Change 2 to the basic instruction.

2. Discussion. Enclosure (1) contains the revised Open/Closed Rating/Rate Lists and is effective 1 March 1977. The list is based on the latest review of career manning levels as defined in the basic instruction. It should be noted that although there are no rates/ratings listed in CREO Group E, reenlistment and extension restrictions are imposed on certain CREO Group D rates/ratings listed on page 3 of revised enclosure (1).

3. Action. On 1 March 1977 replace enclosure (1) to the basic instruction with revised enclosure (1).

W. L. McDONALD
Deputy Chief of Naval Personnel

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APPENDIX-F, Continued

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OPEN/CLOSED RATING/RATE LISTS

OPEN

CREO
GROUP
(RATINGS)

CREO CATEGORIES (RATES)

		E-4	E-5	E-6	E-7	E-8	E-9	NOTES
ABE	A	A	A	A	B	-	-	
BT	A	B	A	A	B	A	A	
FTM	A	B	A	A	C	-	-	(1) (3)
GMC	A	A	A	B	B	-	-	(1)
GMM	A	A	A	A	C	-	-	(1)
GMT	A	A	A	B	C	B	D	(1)
HT	A	B	A	A	B	B	C	
MM	A	A	A	A	C	A	B	(3)
OS	A	B	A	A	C	A	A	
AB	B	-	-	-	-	B	B	(2)
ABF	B	B	B	A	A	-	-	
AC	B	A	A	B	C	B	B	
AE	B	A	B	C	B	B	-	
AF	B	-	-	-	-	-	B	(2)
AM	B	-	-	-	-	B	-	(2) (3)
AO	B	A	B	C	C	C	C	
AT	B	B	C	C	B	B	-	
AV	B	-	-	-	-	-	B	(2)
BM	B	A	B	C	C	B	B	
CTM	B	C	B	B	B	B	B	(3)
CTI	B	B	A	C	C	C	C	(1) (3)
DS	B	B	B	B	C	A	C	
EN	B	B	A	C	C	B	A	(1) (3)
EW	B	B	A	C	C	A	B	(1)
FTB	B	C	B	B	B	-	-	(1) (3)
IC	B	B	A	B	C	B	-	(3)
MA	B	-	-	B	B	B	B	(1)
MR	B	C	A	B	C	B	C	
MT	B	A	B	B	B	-	-	(1) (3)
NC	B	-	-	B	C	B	C	(1)
OM	B	B	B	C	C	C	-	
OT	B	B	A	B	C	B	C	
PR	B	A	B	C	C	C	C	
QM	B	B	A	A	C	C	C	(3)
SM	B	A	A	C	C	C	B	
STG	B	B	B	B	C	C	-	(1) (3)
STS	B	B	B	B	B	A	-	(1) (3)
TD	B	A	B	C	C	B	B	

OPEN SKILLS

0416	335X	8254
0719	336X	8262 — (NOTE-5)
0721	338X	8296 — (NOTE-6)
0737	3393	8298 — (NOTE-5)
0738	3394	8402
1412	3395	8407
1427	3396	8424
1431	3805	8425
1433	3806	8492
1435	3809	8477
1436	3811	8478
1438	3812	8479
1442	3813	8483
1443	3814	8485
1453	3825	8495
1461	4105	8506
1473	4111	8507
1502	4115	8753
1516	4116	
1522	4117	
1572	4245	
1573	4314	
1574	4511	
1598	4512	
1615	4513	
1623	4724	
1637	4746	
1711	481R	
1821	481U	
2304	481V	
2305	48KB	
2318	48LL	
2319	48MI	
2342	48UJ	
2345	48UP	
2346	48US	
2353	4935	
2393	4938	
2514	4955	
2612	4956	
330X	5321	
331X	5326	
332X	5332	
333X	5343	
334X	5401	

PERSONNEL WITH SS/SU DESIGNATOR IN THE FOLLOWING RATINGS:

DS ET FTG HM MS PN SK
RM ST TM YN IC MM QM

ENCLOSURE (1)

APPENDIX-F, Continued

DUPEXSINST 1133.25C CH-2

9 February 1977

OPEN/CLOSED RATING/RATE LISTS

NEUTRAL

CREO
GROUP
(RATINGS)

CREO CATEGORIES (RATES)

		<u>E-4</u>	<u>E-5</u>	<u>E-6</u>	<u>E-7</u>	<u>E-8</u>	<u>E-9</u>	<u>NOTES</u>
ABH	C	B	C	C	C	-	-	(2)
AD	C	C	C	C	D	C	-	(2) (3)
ADR	C	A	B	C	D	-	-	(3)
AG	C	B	C	C	D	B	B	
AME	C	A	B	C	C	-	-	(3)
AMH	C	B	C	C	C	-	-	(3)
AMS	C	A	C	C	C	-	-	(3)
AQ	C	D	D	C	C	B	-	
AS	C	-	-	C	C	C	C	(2)
ASE	C	A	C	-	-	-	-	
ASH	C	B	C	-	-	-	-	
ASM	C	B	C	-	-	-	-	
AW	C	C	B	C	C	A	B	(1)
AX	C	C	B	B	B	C	-	
AZ	C	B	C	C	C	B	B	
BU	C	C	C	C	C	C	-	(2)
CM	C	B	C	C	C	B	-	(2)
CTA	C	B	B	B	C	C	C	
CTO	C	B	C	C	C	B	B	(1) (3)
CTR	C	A	C	D	C	B	C	
CIT	C	A	B	C	C	C	B	
CU	C	-	-	-	-	-	C	(2)
DM	C	B	B	C	D	D	E	(2)
DP	C	B	B	C	C	B	B	
EM	C	B	C	C	C	B	A	(3)
EQ	C	-	-	-	-	-	C	(2)
ET	C	-	-	C	C	B	B	(3)
EIN	C	D	B	-	-	-	-	(3)
ETR	C	D	B	-	-	-	-	(3)
FT	C	-	-	-	-	C	B	(2) (3)
FTG	C	D	A	B	C	-	-	(3)
GM	C	-	-	-	-	B	C	(2)
IM	C	B	C	C	C	B	-	
IS	C	A	B	C	C	C	B	
LI	C	A	B	C	C	C	D	(2)
LN	C	-	A	C	D	C	B	
ML	C	D	C	C	C	D	D	
MN	C	B	C	C	C	B	C	(1)
MS	C	B	C	C	C	B	A	
MU	C	A	C	D	D	B	E	(2) (3)
PC	C	C	C	C	C	B	B	(2)
PH	C	C	C	C	C	B	D	(2)
PM	C	D	C	C	C	-	-	(2)
PN	C	C	C	C	C	B	B	(3)
RM	C	A	B	C	C	B	C	(3)
SK	C	B	C	C	C	C	C	(3)
ST	C	-	-	-	-	-	C	(3)
SW	C	B	C	C	C	B	-	
TM	C	B	B	C	C	C	A	(1) (3)
UT	C	D	C	C	C	C	C	
YN	C	A	C	C	D	C	C	(3)

ENCLOSURE (1)

APPENDIX-F, Continued

BUPERSINST 1133.25C CH-2
9 February 1977

OPEN/CLOSED RATING/RATE LISTS

CLOSED

CREO GROUP (RATINGS)		CREO CATEGORIES (RATES)						
		<u>E-4</u>	<u>E-5</u>	<u>E-6</u>	<u>E-7</u>	<u>E-8</u>	<u>E-9</u>	<u>NOTES</u>
AK	D	B	D	C	C	C	B	(2)
CE	D	C	D	C	C	B	-	(2) (4)
DK	D	D	C	C	C	C	E	(2)
DT	D	D	C	C	C	B	C	(2) (3) (4)
EA	D	D	E	D	E	C	-	(2) (4)
EO	D	C	C	D	D	C	-	(2)
HM	D	D	C	C	C	B	C	(2) (3) (4)
JO	D	D	D	C	C	C	C	(1) (2)
FI	D	-	-	-	-	-	D	(2)
SH	D	B	D	C	C	C	C	(2)

NOTES:

- (1) NO DPEP INPUTS ALLOWED.
- (2) NO DPEP OR PRIOR SERVICE INPUTS ALLOWED.
- (3) SEE OPEN SKILLS LIST FOR CERTAIN QUALIFICATIONS/NECS IN THIS RATING WHICH ARE NOT GOVERNED BY CREO GROUP OF RATING.
- (4) CHNAVPER (PERS-52) APPROVAL REQUIRED TO EFFECT REENLISTMENT OR MAKE OPERATIVE AN EXTENSION SUBSEQUENT TO THE FIRST REENLISTMENT FOR ALL PERSONNEL WITH LESS THAN TEN YEARS DAY-FOR-DAY ACTIVE MILITARY SERVICE.
- (5) MUST HAVE SERVED IN THE APPLICABLE 82XX BILLET FOR 3 YEARS DURING THE LAST ENLISTMENT OR ONE YEAR WITHIN THE LAST 4 YEARS, THE TOTAL ELAPSED TIME OUT OF THE APPLICABLE 82XX BILLET NOT TO EXCEED 3 YEARS.
- (6) MUST HOLD CURRENT CERTIFICATION OF FIRST CLASS SWIM QUALIFICATION PRIOR TO SUBMITTING UNDER THIS NEC.

ENCLOSURE (1)

Appendix G

The Question of Reading Ability Among Navy Personnel

Are the reading skills of many personnel presently coming into the Navy less than those required to perform in highly technical areas? A major key to determining the implications of low reading ability scores for many personnel presently enlisting in the Navy [ref: "Reading Ability" in Section II B of this report] would seem to lie in an assessment of the kinds of materials which such personnel would have to read. In this regard, a number of studies have been reported in which manuals and other printed documents essential to the professional preparation of Navy enlisted men were rated for their readability. In all cases, a well-known readability formula (e.g., FLESCHE, FORCAST, etc.) was employed which could measure by specific criteria (e.g., words per sentence, number of syllables per 100 words, etc.) the reading difficulty (readability) of a piece of written material and assign it a reading grade level (RGL).

In a study conducted by Biersner (1975) of the RGL's of 185 Navy rate training manuals (RTMs) and 188 non-resident career courses (NRCC's), it was found that the majority of the RTM's and NRCC's were written at the lower college (13th grade) level. However, RGL's varied widely for individual sections within each RTM and NRCC, often ranging from the seventh grade to college graduate (16th grade) level.

The Biersner findings on the reading difficulty of RTMs and NRCCs are consistent with several other previously conducted research efforts in which a FORCAST formula was used to measure the reading difficulty level

of training materials used by the Armed Services. A group of 20 Navy RTM's sampled by Carver (September 1973) had an average RGL of 14.8, ranging from 11.7 to 20.0. Duffy et al (1974), in an analysis of Navy training manuals for firemen, seamen, and airmen, found that their average RGLs were 10.18, 10.18, and 10.49 respectively; and the Blue Jacket's Manual had an average RGL of 11.50. Similarly, Mockovak (1974) found that five Air Force training manuals ranged in readability from 11.1 to 11.4, and Caylor et al (1973) found the readability of twelve Army manuals ranged from 7.6 to 12.2, with a median grade level of 10.8.

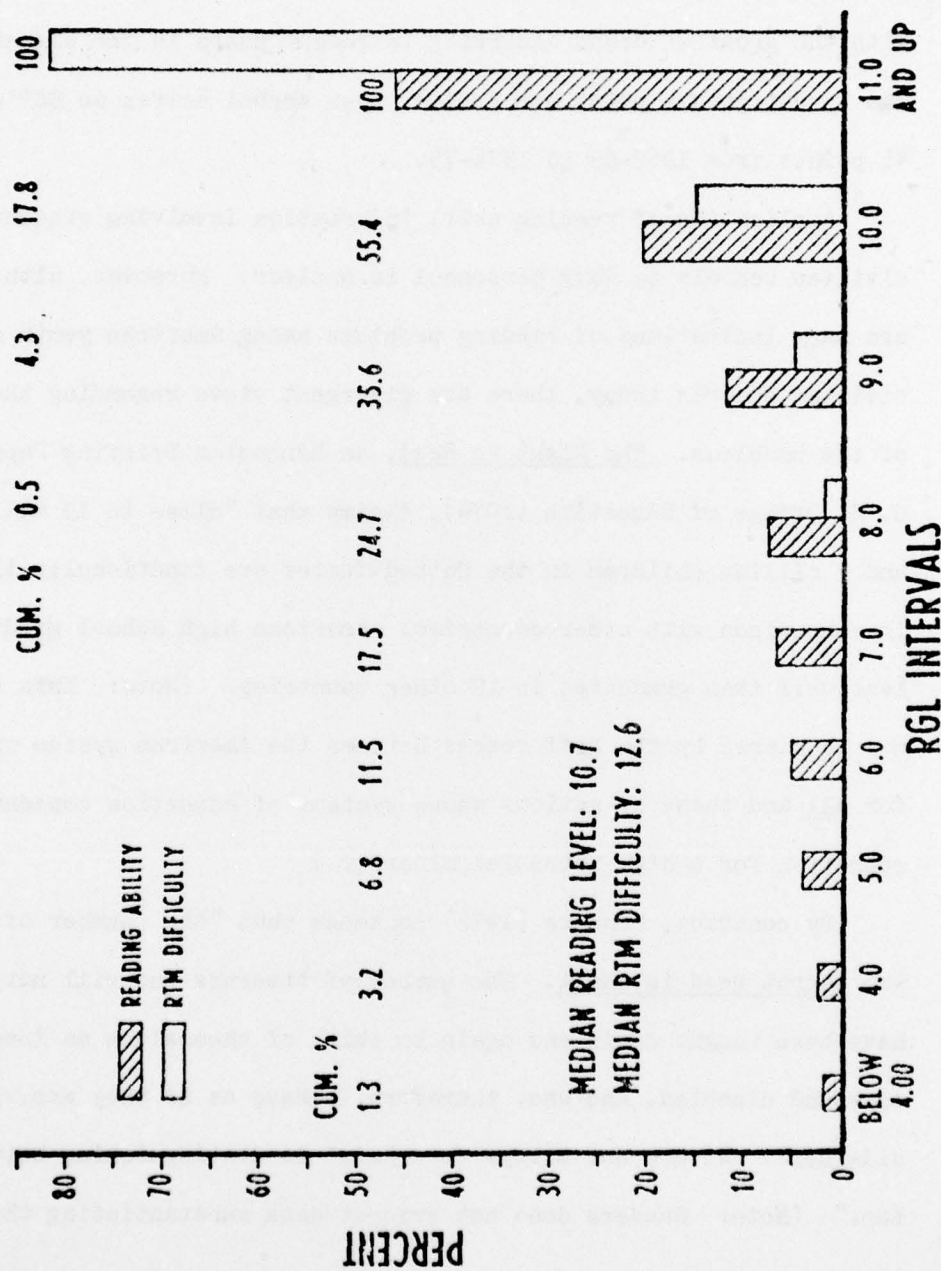
In drawing some implications from comparisons of Biersner readability scores with Duffy et al reading ability scores, Curran (1975) made some discouraging observations. He noted that approximately 82% of the RTM's of the Biersner study were written at the 11.0 grade level or above, while only 45% of the recruits tested by Duffy et al read at the 11.0 grade level or above. If this apparent mismatch between reading ability and reading difficulty for over half of the recruits in using the majority of the manuals is substantiated, it carries critical implications. See Figure 9, constructed by Curran, to illustrate the range of reading-readability mismatches.

Curran noted further that the manual Basic Military Requirements, the content of which must be known for advancement to E-3, had a RGL of 10.85. Given the 11.0 median reading level of the recruits tested by Duffy et al, it appeared possible though not conclusive to Curran that about half of the recruit sample might not have been able to read this manual.

FIGURE 9

Comparison of Recruit Reading Abilities
and Training Manual Difficulty

RECRUIT READING ABILITY (N=21,000) vs RTM DIFFICULTY (N=185)



Source: T. E. Curran, Naval Personnel R & D Center, Readability Research in the Navy, October, 1975.

There seems to have been a general reduction in the last decade or so in basic skills acquired in American schools. Harnischferger and Wiley (1976) report that up to the mid-1960's achievement scores steadily increased, but since then have declined for all grades from 5th to 12th -- with the greatest drops occurring in recent years in the higher grades. The investigators point out further that verbal scores on SAT's declined 41 points from 1962-63 to 1974-75.

Application of reading skill information involving students in civilian schools to Navy personnel is unclear. Moreover, although there are many indications of reading problems among American youth attending civilian schools today, there are divergent views regarding the severity of the problems. The Right to Read, an Education Briefing Paper of the U. S. Office of Education (1974), claims that "close to 19 million adults and 7 million children in the United States are functionally illiterate ... in comparison with other countries. American high school graduates read less well than graduates in 12 other countries. (Note: This conclusion may be biased by the differences between the American system of education for all and those of nations whose systems of education concentrate on education for a high-potential minority.)

By contrast, Sanders (1974) contends that "the number of students who cannot read is small. The number of students who will not read, who have been taught again and again to think of themselves as inadequate, slow and disabled, and who, therefore, behave as if they are, is considerable. We are not always successful in distinguishing between the two." (Note: Sanders does not present data substantiating the difference

in readers by "can not" and "will not".)

With respect to the reading skills of high school graduates entering college today, Larson et al (1976) report that reading ability, as measured by the Diagnostic Reading Test, was highly stable for freshmen at the University of Florida over an 11-year period between 1960 and 1970, providing one piece of evidence that there has been no noticeable decline recently in reading skills among high school graduates (despite an increasing application of an open-admissions policy at that school beginning in 1962).

These positive findings on the reading ability of high school graduates admitted to college is in contrast to those reported by Kurzman (1973). Kurzman reports an average RGL score of only 10.4 among 81 freshmen tested who were taking social science courses at a New York college. The negative implication of this average score is that Kurzman's further analysis of a sample of 23 books from the Social Science area produced a SMOG test readability distribution of only 4 books written at the freshman (13th grade) level, with 7, 5, 6 and 2 books written at the 14th, 15th, 16th, and 17th grade levels respectively.

Despite the apparent elusiveness of the exact nature of "the reading problem" among students coming out of American secondary schools, as the above conflicting reports emphasize, there does seem to be a problem. In fact, Smith (1974) states that the problem of literacy among American high school graduates is regarded as sufficiently serious to have caused a national Conference on Studies in Reading to suggest a research and development program to improve the reading and writing proficiencies of

high school graduates. Whatever the specifics of literacy problems may be, however, the available literature on reading skills of high school students contains nothing to indicate that personnel recruited by the Navy are less skilled than the civilian cross-section of American youth of the same age. Nevertheless, the existence of a reading problem among youth, both civilian and military, would pose serious implications for the effectiveness and even the morale of the latter group.

Although the content of this appendix has been speculative in nature, the matter of reading ability among Navy personnel and readability of Navy publications is vitally important. Since this report focuses on differences in Navy personnel characteristics, the question of reading ability -- and, in particular, differences in reading ability -- is relevant. Evidence has been presented to suggest that sailors vary in their ability to read, and wherever possible such variations must be taken into consideration in writing Navy publications. The readability of technical manuals, for example, should be consistent with the reading skills of the technicians for whom they are written.

APPENDIX-H

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